THE GENESEE FARMER.

Vol. XVI., Second Series. ROCHESTER, N. Y., SEPTEMBER, 1855. No. 9

PRINCIPLES OF IMPROVING DOMESTIC ANIMALS.

CHAPTER III.

COLLATERAL FACTS CONSIDERED.

In the matter of improving domestic animals, there are several collateral facts not unworthy of consideration.

1. The high prices now paid, and which have been for fifty years, for really superior animals for propagating their *like* and their *race*.

In illustration of the value of Improved Stock, attention is invited to a few facts copied from English and American works of acknowledged authority on the subject. Thomas Bates, Esq., of Kirkleavington, was one of the most successful breeders and improvers of neat cattle that England has ever produced. He commenced his operations in 1804 by purchasing at a high figure a cow of his famous Dutchess stock of Mr. Charles Colling. After six years' experience, so pleased was he with the results obtained by this Dutchess cow, that at Mr. Colling's public sale in 1810, he determined to have at any price a heifer, then two years old, called Dutchess, and grand daughter of the cow he first purchased. Mr. Bates' instructions to the auctioneer were, that whatever sum any one might offer for Dutchess, he was authorized to make a bid for him of five guineas more; and ultimately, he obtained the prize for the sum of one hundred and eighty-three guineas. This investment of nearly a thousand dollars in a two year old heifer, made forty-four years ago, was one of the most profitable ever known in any country in the cattle line. How much money Mr. Bates obtained from his sales of the blood of this Dutchess family before his death, in 1849, we have no means of knowing; but the reputation of his stock, of which this family was most esteemed, may be inferred from the fact that at a public sale after his death five thousand persons were present to compete for the prizes and witness the deep interest of the occasion. The *Farmers' Magazine*, for July 1850, speaking of this sale, says: At the lowest estimate, there could not be less than five thousand persons, including nearly every breeder of short-horned cattle in the United Kingdom, as also breeders from the continent of Europe, and from the United States of America.

"It may with confidence be maintained that on no similar occasion has so great an interest been excited amongst the breeders of this variety of the ox, so justly the pride of our country, as on that referred to above; and well indeed did the herd deserve the far-extended fame which attracted such a mighty gathering on the occasion of its dispersion to be the *nuclei* of new, or to enrich collections already in being, in our sea-girt isles, in Europe, and in the great western quarter of our planet beyond the Atlantic."

There were sixty-eight animals in this herd, which consisted of six families, namely: the Dutchess, the Oxford, the Waterloo, the Cambridge, the Rose, the Wild Eyes, and the Foggathorpe;—which are enumerated in succession according to the prices that each realized at the sale. At the show of the Royal Agricultural Society at Oxford, in 1839, Mr. Bates had the unparalleled triumph—in England—as a breeder of Short-Horns, to win four of the principal prizes with the only four animals exhibited by him; and he was offered, but refused, four hundred guineas each for his premium cows and heifers.

Thirty pure Short-Horned cattle belonging to the Clark County Importing Company were recently sold in Ohio at the following rates: A bull two years old brought $4,000; one eighteen months old, $2,500; another, $1,900; and others varying down to $300 each. One cow sold at $1,425; another at $1,300; another at $1,000; so down to $200 each.

Grant that such prices are extravagant, and that no general rule can be deduced from extreme cases;

yet the many facts demonstrating the high market value of superior stock—which facts might be cited to almost any extent—deserve the serious consideration of every man in any way interested in rural economy. These remarks will apply to the breeding of horses, mules, sheep, swine, and poultry, as well as to the propagation of neat cattle.

2. *One general physiological law applies equally to the improvement of all domesticated animals.*

The better to understand this law, or rather system of vital laws, let us first study some of the most important facts developed by the really successful improvers of live stock. By common consent Mr. BATES stands in the front rank of those most distinguished for their skill in cattle breeding; and the writer has taken due pains to learn the principles on which Mr. B. operated so profitably to himself and beneficially to the public during forty-six years. He united the improvement of a cold, heavy, worn out *clay farm* of 1,000 acres, 600 in tillage and 400 in grass land, with the improvement of Short-Horns; and it is in this double capacity of a grain grower and grazier—the improver of land, of crops, and of domestic animals—that this model English farmer appears in his true character. The following statements are from his own pen, and deserve every attention, coming from one so practical and scientific in all his processes:

"I had not long been engaged in farming before I became thoroughly convinced that the atmosphere contained the great ingredients for the amelioration of the soil. This I discovered by seeing the good effects of the same surface being exposed to the atmosphere as long a time as possible before turnip seed was sown; and the fineness and openness being increased without changing the surface, was the grand desideratum. A field plowed in October after oats, ribbed across in February, and then only worked with a scuffer afterwards, never again plowed till drilled for turnips, produced the heaviest crop per acre of white turnips I ever saw; and this was in the year 1793—the year Mr. GEORGE CULLEY and Mr. BAILEY made the survey of the county of Northumberland for the Board of Agriculture.

"These two gentlemen examined that crop, and they said they had never before seen so large a crop of turnips. Nor have I since then;—they considerably exceeded fifty tons per acre when they had stood till February. They were sown in June. I mention this fact to induce young men to attend to the operations of nature.

"I mentioned my views soon afterwards to an old farmer, and thirty years afterwards he acknowledged to me the benefit he received from my remarks, and that he never failed of obtaining a good crop of turnips.

"But till then he had kept working his land, and plowing and replowing it again and again, up to the time of sowing; and that the more he worked, the worse his crop; that my remarks had been many hundred pounds benefit to him."

Mr. BATES' farm being an adhesive clay, too much stirring with the implements of tillage made it *less* pervious to the atmosphere than it was before. The proportion of this kind of soil is less in this country than in England; although in some States "mortar land" is abundant.

Before his death Mr. BATES had drained 850 acres of his farm. In the use of lime in conjunction with peat, he gives the following experience:

"I may also make a remark that may be useful to those who have found peaty earth mixed with new-made dung highly beneficial, laying the same in layers twelve inches thick of peat earth to six inches of dung as now made, turning the heap over a few weeks before applying the same to the soil. I had seen this done in Ayrshire. In 1805 I began the practice, on my return home, and was soon convinced of the benefit to be derived therefrom. In a distant part of the farm I had a very deep peat moss; and during the winter I mixed it in the same way with new-made dung, the whole as mixed was applied to a turnip crop, and *it was a complete failure.*

"The barley sown after the turnips was not half the crop I had previously had on the same field; and the clover and seeds that followed were the same. I then applied fifteen caldrons of lime per acre, and plowed it in for an oat crop. The crop was a very great one, and the field afterwards continued very productive; but not having then studied chemistry, I could not account for the deterioration, and then the after improvement. This induced me to go to Edinburgh to study chemistry to account for the change.

"The first trial I made of peat moss it was free from the oxyde of iron; the latter, that did the harm, had a very large portion of that salt; this destroyed the dung and rendered it useless; but the application of a large dose of lime (fifteen caldrons per acre) removed the bad effects of the oxyde of iron, and converted it into a beneficial manure. This hint, costly to me in the first instance, may, I hope, be of benefit to others, and as such I have here detailed it fully."

This example of Mr. BATES fifty years ago, in going to Edinbugh to study chemistry to understand the nature and properties of "peat moss" and stable manure is worthy of all commendation; and it strikingly evinces that determination and talent which made him a world-wide reputation in after life.

Now, the organic acids, as well as the acid salts of iron in peats, are better understood; nevertheless, we often see such vegetable matter applied to an injurious extent on cultivated land without either lime or ashes to counteract its acidity. Mr. BATES started with the idea that he could double the product of each acre, and then make the vegetable food consumed by each beast yield twice the return realized

by other farmers in the vicinity. His mark was thus a gain of *four-fold* on the farm economy of his time —a purpose which he fully accomplished. It took twelve years to complete one course of his system of rotation of crops; which, as the crops best adapted to the climate of England are inferior to others in this country, we will not detail. Turnips, wheat, oats, beans, clover, and Italian rye-grass, were the principal plants cultivated by him.

Among other articles of food for neat cattle admirably calculated to make their flesh, hides, and hair appear to the best advantage, Mr. BATES was long in the habit of feeding boiled flax seed, or "lint seed" as he calls it. He says: "I tried it in 1791, now fifty-seven years ago, and I found it excellent when turnips failed. I have repeatedly used it at various times since then, particularly in the springs of 1804, 1818, 1819, and 1820; but my most successful trial of boiled lint seed was in 1836." We condense his statement by saying that he fed three year old steers a bushel a week each, which were so well fattened that he sold them to a butcher for £34 a head, or $170. The food given with the lint seed was chopped straw, of little value by itself; the improvement of the animals was great, and the cost of keep beside labor was trifling. A return of 320 to 1, besides the straw and labor, to say nothing of the manure made. In this instance the profit was unusually large, because the lint seed was bought at 1½ pence per bushel, being a part of a cargo that had been damaged by sea-water.

3. *Beauty* is a material element in fat cattle. If such were not the fact, Mr. BATES would hardly have found butchers willing to give him $170 a head for his Short-Horn steers, no matter what they weighed.

The beauty of improved Devons and Short-Horns adds largely to the market value of these popular races, when duly fattened for beef. A critical analysis of *beauty* and *price* in all domestic animals would be instructive in many points of view; it would show that the *beautiful* in these creatures only exists as their organization becomes more perfect in form, less expensive in the consumption of food, or more powerful in its muscular developments. In a word, it would prove that true beauty is a legitimate element of value, an effect of vital laws, and not, as many suppose, a matter of mere fancy. Animals that possess deep, broad, and capacious chests round bodies, small heads, and straight limbs, are found by experience to take on flesh more readily than those in which a different organization exists. Hence the superior condition of well-formed beasts assists in rendering them handsome. A good judge, however discovers in a lean animal its capacity for assimilating food, and yielding a profitable return for the same. A sound, discriminating judgment in this matter can only be acquired by close observation, much experience, and not a little study. The outward signs of strength of vital powers within are numerous, complex, and not very easily described in popular language.

J. B. LAWES AND JUSTUS VON LIEBIG.

Concluded.

We have seen what LIEBIG'S views were *supposed to be* in reference to the value of manures. His pupils and followers, as well as those who differed with him, evidently understood LIEBIG as asserting that if the inorganic constituents or *ashes* of a given species of plants were supplied in sufficient quantity, and in proper condition, we should obtain a maximum yield; that the crops on a field increased or diminished as these mineral elements were supplied or withheld; that the mineral manure patented by Prof. LIEBIG, was an embodiment of his views; and that "sooner or later, they (farmers) must see that in this so-called 'mineral theory,' in its developement and ultimate perfection, lie the whole future of agriculture."

LIEBIG, in his recent pamphlet, denies having ever entertained these views, and admits very reluctantly, however, that Mr. LAWES' experiments prove these views to be erroneous. He now says: "I consider ammonia and its salts exceedingly useful, and indeed at present even, *perfectly indispensable* as a means of increasing the produce of our fields beyond a certain limit, without the use of stable manure." Surely there is some difference between this sentence and the following one which will be found in the first edition of LIEBIG'S "Letters on Chemistry," but which has been altered in the subsequent edition, published since the appearance of Mr. LAWE'S papers. "It follows, consequently, that we cannot increase the fertility of our fields by a supply of nitrogenized manure, or by salts of ammonia; but rather that their produce increases or diminishes, in a direct ratio with the supply of mineral elements capable of assimilation."

It is evident from these and other sentences which might be cited, that LIEBIG has changed his views in regard to the value of ammonia as a manure; but it is still very difficult to determine "what it really is that LIEBIG means." Perhaps he may accuse us, as he has Mr. LAWES, of having read but one sentence in his book, so we beg leave to state beforehand, that

we have read it over carefully several times, and that we are still in doubt as to the real position of the learned author on the subject it is the special object of the work to elucidate. He has made some "agricultural experiments" on a ten acre field, and in summing up his conclusions from them, says: "My experiments, which occasioned me an outlay of 8,000 florins, ($3,200,) or $3.20 per acre, show indeed that to make a soil fertile, which is barren from want of active (soluble) ingredients, and not on account of unfavorable physical condition, requires an outlay greater than the purchase of the most fruitful soil; but in this I was in no way disappointed. What I wished to arrive at, was well worth the sacrifice. What I have arrived at, is, [now, surely, he will state his conclusions on the value of mineral manure; but, alas, no! what he has arrived at is only] *the firm conviction that the time must come when agriculture will be carried on as an art, according to scientific principles, and not according to mere recipes.*"

LIEBIG brings forward these experiments as practical evidence of the correctness of his opinions, and they are, therefore, worthy of attention. He says: "In the years 1845 and 1847 I instituted a series of experiments on the action of individual mineral manures. * * Former experiments which I had made in my garden, in the city, gave no results; *do and apply what I would, I was not able to perceive any effect from a single one of my mixtures.*"* The cause of this is ascribed to the richness of the garden soil. This led him to purchase a ten acre field, "distinguished from all other land in the vicinity by its almost perfect incapacity to support the ordinary cultivated plants; I do not believe that in an entire year, so much grass and fodder grew upon it as would sustain a single sheep." This was, unquestionably, a poor soil; and the mind recalls instances of similar soils having been rendered fertile by the ordinary processes of agriculture. The farms of the late Judge BUEL, and of D. D. T. MOORE, of Waterveleit, N. Y., and many in the county of Norfolk, England, were once blowing sands, but are now as remarkable for fertility as they once were for barrenness. This result has been attained principally through growing crops of clover and turnips, and plowing them in or consuming them on the farm, thus supplying organic matter and returning the manure, and especially ammonia, from the atmosphere. This, however, is simply a deduction from certain theoretical considerations founded on Mr. LAWES' experiments; and we have frequently expressed the wish that experiments with ammonia, salts, organic matter, and mineral substance, might be instituted on similar soils. By applying ammonia on one plot, organic matter on another, the various mineral manures on others, and a mixture of these in different quantities and proportions on others, and reserving one plot without any manure at all, we might obtain decisive information on this interesting subject. Let us see what kind of experiments the great Geissen Professor instituted.

No part of the field was left without any manure. A quantity of mineral manure was spread uniformly over the *whole field*, excepting a piece of vineyard of about 2000 vines, *each* of which received at the time of planting ¼ lb. of the *same mineral manure*. "On separate divisions of the field were cultivated wheat, rye, barley, clover, potatoes, beets, maize, and Jerusalem articokes." Would it not have been better, instead of having nine different crops and only one kind of mineral manure, to have had nine different manures, and only one crop? If the ashes of plants represent the manure best adapted for their growth, surely no one compound of mineral manures could be best suited to both wheat and clover, maize and beets.

"Some patches received saw-dust, one nothing but stable-manure, another a mixture of the mineral manure with an equal quantity of stable-dung. Beside this stable dung, no other animal substance, no ammoniacal manure was used on the whole field. One small plot had added to it several wagon loads of soil from a forest; another received the same, mixed with the mineral manure." In other words, the *whole field* was dressed with the *same mineral manure*. Some plots had stable-dung, and some forest soil, with and without an additional quantity of the *same mineral manure*. No purely ammoniacal matter was used. The poor impoverished soils of Maryland, Virginia, &c., have been made to yield an excellent crop by the application of a small quantity of a strongly ammoniacal guano. Who knows whether such would not have been the case with "LIEBIG'S Heights?" Surely in instituting scientific experiments, there could have been no harm in trying.

* Prof. HORSFORD, in one of his letters from Geissen, (*Cultivator* 1846, page 139,) alludes to these experiments as follows: "In the spring, (1844,) preceding my arrival in Geissen, the Professor planted some grape scions under the windows of the laboratory. He fed them, if I may use such an expression, upon the *ashes of the grape vine*, or upon the proper inorganic food of the grape, as shown by analysis of its ashes. The growth has been enormous, &c. I was shown pots of wheat, in different stages of their growth, that had been fed variously—some upon the inorganic matters they needed, *according to the analysis of their ashes*—others had merely shared the tribute of the general soil. The results in numbers I don't yet know. In appearance, no one could be at a loss to judge of what might be expected. * * The experiments of Prof. L., which I have alluded to, are full of interest, not alone as sustaining the views he has expounded, [what views, if not those of the mineral theory?] but as also showing that the treasures in the shape of inorganic manures, heaped up in some quarters of the globe, may be made to equalize the fruits of labor in other regions."

The crops the first year "turned out so moderate, —*so bad*, in fact," that no details are given. The yield of turnips, clover, and potatoes did not suffice for keeping one cow. In every case, however, where organic manures containing ammonia were used, the crops "were heavier than elsewhere." The wheat manured with "stable-dung and minerals, was equal to any in the neighborhood." Why not have tried a plot with stable-dung, without any minerals? It must be evident to all that the first year's results of LIEBIG's experiments are strongly in favor of organic or ammoniacal manures. We are told that in the second, third, and fourth years the soil increased in productiveness, though no details at all are given. In 1840, LIEBIG's gardener "purchased the whole field, and the industrious man who could not afford to buy manure, manages with profit the well-conditioned little farm, assisted during the summer months by a little business, in selling refreshments, he is able to support himself and family, keeping two cows, and annually raising several head of cattle; and he has acquired enough to enable him to enlarge his buildbuildings, and all this without ammonia, or humus, and only by help of mineral manures."

This is certainly a very gratifying result. After expending on ten acres of land $3,200 for mineral manures, &c., an industrious Dutchman, by the aid of a little business, which probably his wife and children engaged, in, was enabled to support himself; and all this without the aid of ammonia? Was it ever heard before that a man could get a living from 10 acres of land, in close proximity to a large city? But let us see whether this was accomplished without the aid of ammonia. The forest muck, saw-dust, and stable-manure used the first year, all contained ammonia, and the crops *were much the best where they were used*. LIEBIG says: "Since the present owner came into possession, the stable-manure and all the animal excrements produced on the premises, *and especially the urine*, have been collected with the greatest care, and of course have been incorporated with the soil." In other words, great care has been used to save all the *ammonia* and incorporate it with the soil, and fair crops, after a period of eight years, have rewarded the care and skill of the cultivator. Who knows but this same result might have been attained in one year, by an application of ammonia? If the atmosphere is capable of supplying all the ammonia that plants require, why, on this field, which had been so lavishly dressed with all the mineral elements of plants, was it found necessary to save all the dung, and "*especially the urine*," and incorporate them with the soil. Surely, the gardener evidenced little faith in the teachings of his great master. If these experiments prove any thing, it is the very reverse of what LIEBIG intended they should prove; and they are the only experiments brought forward to prove his position.

After disparaging Mr. LAWES experiments, LIEBIG says: "*The single problem worthy of scientific agriculture* at the present time, is to establish in place of a change of crops, a change or succession of manures, which shall enable the farmer to grow on each of his fields that crop, which, under the circumstances, will be most profitable. How simple a form would the labors of the farm assume, could he continuously cultivate the same plant on the same field." This is certainly a good idea, though an old one; but how shall we ascertain what manures are best adapted for the same crops. LIEBIG himself took out a patent for "a preparation of compounds, *based upon analysis of plants*, which were estimated to provide a given species of plants with a nourishment it would need throughout a series of years." That these compounds utterly failed in Germany, England, and America, is notorious. The idea was a splendid deduction, but, unfortunately for the farmer, so far from revolutionizing agriculture, as was predicted, it proved what might have been foreseen, that deduction is not a safe guide in scientific agriculture. We shall probably incur LIEBIG's displeasure by referring to this unfortunate manure speculation. He has brought forward a number of sentences from his various works to show that he did not teach the "pure mineral theory;" but this patent mineral manure, which is a practical embodiment of the theory, is not so easily disposed of, hence the bitterness manifested on the subject.

LIEBIG's patent mineral manures have failed to solve "the single problem worthy of scientific agriculture." We cannot, by their use, "continuously cultivate the same plant on the same field." Now, though Mr. LAWES does not think it desirable to cultivate the same crops on the same land, he has succeeded in doing so to an extent which one would suppose from the above sentence, should have secured the approbation of the great German chemist. There is now growing on *Broadback** the *twelfth annual wheat crop*, and the crop of last year was the largest yet harvested from it; the plot yielding 55 bushels of wheat per acre. So with the turnips on *Barnfield;*

* *Broadback* is the name of Mr. LAWES' experimental wheat field. All the fields in England are named. *Barnfield, Geescroft, Hoosfield*, are the names of the experimental turnip, bean, pea, tare, and clover fields.

the *thirteenth* annual crop is now growing, and though the soil is rather too heavy to be well adapted for turnip culture, yet good crops are obtained, fully equal, as we know from our own observation, to those grown in the neighborhood, under the ordinary system of rotation. So in *Geescroft*, twelve crops of beans have been grown in twelve years, and removed from the soil, and yet as good crops are obtained as the farmers could desire. So of peas and tares. Clover is an exception; no matter how lavishly and variously it is manured, clover will not flourish continually on the same land. But with other crops, Mr. LAWES has "solved the single problem worthy of scientific agriculture." At the present price of wheat and ammonia, Mr. LAWES or any other intelligent agriculturist can not only grow wheat continuously on the same land, but can also *grow it with a profit.* If his land, without manure, will produce 15 bushels of wheat per acre, he can make it produce 30 bushels by an application of from $12 to $15 worth of manure. If wheat sells for 80 cents to $1 per bushel, such a system will not pay; if it is worth from $2 to $3 per bushel, nothing can be more profitable.

LIEBIG says: "So to explain the action, and recommend the use of ammonia salts in the production of wheat, as Mr. LAWES has done, appears to be mockery of the present state of agriculture; for all the salts of ammonia now manufactured in Europe, are not enough to supply the fields of the kingdom of Saxony with the quantities used by Mr. LAWES." This appears to us a very lame argument. What if salts of ammonia are not now manufactured in sufficient quantities? If farmers can obtain what they want at present, shall they not use them? The ammonia salts used in agriculture or commerce, are made principally from the refuse liquor of the gas works; and in nearly every city in Europe the greater portion of this liquor runs to waste. In this country, we know of but one establishment where ammonia salts are manufactured from gas liquor for agricultural purposes—that of M. DE BURG, of New York. Shall we condemn the use of ammonic salts, because they are not at present extensively manufactured, while we have the means of increasing their production to an almost unlimited extent?

But Mr. LAWES has not "recommended the use of ammonic salts in the production of wheat." Mr. LAWES tells us, indeed, that ammonia is specially needed for the production of wheat; but he has never advised farmers to use ammonia salts at their present price. He used them in his experiments because they enabled him, for a special object, to apply ammonia free from the organic and mineral matter united with it in barn-yard manure, guano, rape cake, &c. These experiments led him to the conviction that ammonia, in ordinary agriculture, is greatly needed on all our wheat soils, but he has never recommended farmers to imitate his example, and purchase expensive ammonic salts. He points to cheaper sources of it. What these sources are, we shall see further on.

PROFESSOR LIEBIG, in some parts of his late work, appears to labor under the impression that Mr. LAWES affirms that if ammonia be present in sufficient quantity in the soil, the wheat plant can grow *without minerals.* We cannot understand how any one could arrive at such a conclusion from Mr. LAWES' writings. Certainly he has never written any thing that we have seen, which favors such an idea; while he has repeatedly declared that the "growing plant must have within its reach a sufficiency of the mineral constituents of which it is to be built up." He also fully admits that the atmosphere and rain-water are capable of supplying plants with a considerable quantity of ammonia. On these two main points, LIEBIG and LAWES are agreed. In what, then, do they differ? It is obvious that they do differ very essentially, but in what exact particulars, it is hard to say, simply because it is impossible to determine what LIEBIG at present teaches. From the general tenor of his works, we conclude that he believes, or did believe among other things, that the manurial requirements of a plant are represented by its ashes. In other words, that the *proportion* in which potash, phosphoric acid, &c., exist in the ashes of a plant, is the best *proportion* for them to exist in the manure adapted for their growth. The ash of wheat contains 50 per cent. of phosphoric acid; that of turnips only 10 per cent.; therefore, a manure for wheat should contain five times as much phosphoric acid as a manure for turnips. That LIEBIG and his followers have taught this doctrine, cannot be denied. Mr. LAWES' experiment prove this idea erroneous.

LIEBIG, we have shown, taught that if plants are supplied with a sufficient quantity of their ash constituents, they will obtain all the ammonia they need from the atmosphere. Mr. LAWES' experiments show this partly right, and mostly wrong. They show that wheat, which contains only a comparatively small quantity of nitrogen, (ammonia,) requires for a maximum crop, very much more ammonia than the atmosphere and rain can supply under the most favorable conditions. On the other hand, they show that beans peas, tares, and turnips, which contain much more nitrogen than wheat, are enabled to obtain nearly all

the nitrogen and ammonia they require, from the atmosphere and rain-water. Mr. LAWES thinks it not improbable that the other cereals commonly cultivated require, like wheat, a much larger quantity of ammonia for their maximum growth that they can obtain from rain and air; and that, as these generally command a high price, and farmers wish to raise them as frequently as possible, every available means should be used to increase the supply of ammonia on the farm. But, as LIEBIG denies that these experiments lead to any such conclusions, let us briefly glance at the principal points.

Three fields, with the general character of the soil and previous treatment as much alike as possible, were set apart for these experiments, some 17 years ago. Four crops were grown without any manure, and removed from the fields before the experiments proper commenced. One or more plots in each field was always left without any manure, and the others received a variety of the various organic and inorganic fertilizing substances. The first year, on the wheat field, unmanured plot yielded 16 bushels per acre. 14 tons farm-yard manure, on a plot adjoining, 22 bushels. The *ashes* of 14 tons farm-yard manure, 16 bushels. Mean of 9 plots, dressed with artificial *mineral manures*, 16¼ bushels. Mean of 3 plots with artificial mineral manures, and 65 lbs *each of sulphate of ammonia*, 21 bushels per acre.

With turnips, the first year, the unmanured plot gave 4 1-5 tons of bulbs peracre; 12 tons farm-yard manure, 9¼ tons. 56 lbs. sulphate of ammonia, less than 7 tons. 4½ cwt. superphospate of lime, 12¼ tons.

From these few experiments, which we select from a large number giving similar results, it will be seen that even the first year shows a great difference between the manurial requirements of the wheat and turnips. On wheat, a heavy dressing of superphosphate of lime, phosphates of magnesia and potash, and silicate of potash, gave an increase over the unmanured plot of only three pecks per acre; while on turnips, the superphosphate of lime *trebled the crop*. The 56 lbs of sulphate of ammonia per acre, which had such a good effect on wheat, had little effect on turnips, giving only about half as large a crop as the superphosphate of lime.

The second year, *the same* unmanured wheat plot gave 23 bushels per acre; 14 tons farm-yard manure, 32 bushels; and 168 lbs. each of sulphate and muriate of ammonia, 33 1-11 bushels. One plot, which received the previous year superphosphate of lime without benefit, was this year left without any manure, and the yield was 22¼ bushels, or half a bushel *less* than the plot continuously unmanured.

The same unmanured plot the second year, on turnips, produced 2 1-5 tons of bulbs per acre; 5 cwt. superphosphate of lime, 8¾ tons; 4 cwt. superphosphate of lime, with 56 lbs. *sulphate of ammonia*, 5¼ tons.

It is remarkable that while on the unmanured wheat plot the second year, the yield was 23 bushels, the crop on the unmanured turnip plot was only 2 1-5 tons of bulbs per acre; and while sulphate of ammonia is again so beneficial on wheat, it has no influence on turnips; on the other hand, superphosphate of lime which is attended with little or no increase on wheat, gives a great increase of turnips—*four times as much* as the unmanured plot!

The third year, the same continuously unmanured wheat plot yielded 17¾ bushels per acre. On another plot, from which, the previous year, a large crop was taken by the use of ammonia salts, but which was this year left unmanured, the yield was a little over 17¼ bushels. This is again nearly identical with the plot continuously unmanured, and shows conclusively that the ammonia *is all assimilated the first year*. Does it not, also, on the other hand, discountenance the popular notion that ammonia is a *stimulant*, acting on the plant as alcohol on the animal organism? 224 lbs. sulphate of ammonia alone, gave 27¼ bushels. The ash of 3 loads of wheat straw gave 19 bushels; the ash of 3 loads of wheat straw and 224 lbs. sulphate of ammonia, 27 bushels, nearly identical with the yield obtained from the same amount of ammonia alone. 448 lbs. of LIEBIG'S wheat manure gave 20¼ bushels, while the same amount of LIEBIG'S wheat manure, and 112 lbs. each of sulphate and muriate of ammonia, gave 29 bushels. 14 tons farm-yard manure gave 27¼ bushels, or precisely the same amount as that obtained from 2 cwt. of ammonia salts alone.

The third year the same unmanured turnip plot produced only 13¼ cwt. of bulbs per acre; 6 cwt. of *sulphate of ammonia*, 3 1-5 tons; 534 lbs. superphosphate of lime, nearly 13 tons; 3 cwt. of sulphate of ammonia, in addition to the same amount of superphosphate, gave no more, but rather less than the superphosphate alone; 11 cwt. of superphosphate of lime gave 14¼ tons; the same amount of superphosphate, with 3 cwt. of sulphate of ammonia in addition, gave 14¼ tons. We may here remark—and we call particular attention to it as showing that it is the phosphoric and not the sulphuric acid to which superphosphate of lime owes its efficacy as a manure

for turnips—that 12 cwt. of sulphate of lime gave less than 5¾ tons; and the same amount of sulphate of lime with 3 cwt. of sulphate of ammonia in addition, gave only 4¾ tons, while superphosphate gives 14½ tons.

We might extract from these extensive and long-continued experiments many more similar results for other years, but surely we have given enough to show that so far as applied to wheat, the mineral theory, as taught in the extracts we have given from LIEBIG and his followers, is at fault; and also that for turnips, while the rain and atmosphere is capable of supplying to a great extent the ammonia they require, and that it is partly true that the crop "increases or diminishes in a direct ratio with the supply of mineral elements capable of assimilation;" yet it is evident that the proportion in which mineral elements are required, are precisely the opposite of what an analysis of the ashes of the turnip would lead us to expect.* The experiments in *Geescroft*, on beans, peas, and tares, and which contain such a large amount of nitrogen, are benefitted little if any by an application of ammonia or nitrogen. The same, to a certain extent, may be said of clover. There is evidently a great difference in the manurial requirements of wheat, and probably of the other cereals, and those of turnips, beans, peas, tares, and clover. The mineral theory of LIEBIG, indeed, points out a difference, but it is the *very reverse* of what the above experiments and others which might be brought forward, show to be the case.

LIEBIG claims these experiments as a practical confirmation of his theory; and by suppressing some of the principal facts, mistaking others, and seizing on one or two results that are manifest exceptions to the general indications of the experiments, and by a series of ingenious special pleadings, he endeavors so to twist the results as to make them sanction the mineral theory. Let us examine the arguments of the great chemist.

From the facts that the unmanured wheat plot yields annually about 18 bushels of wheat per acre, that the addition of a great variety of mineral manures give little or no increase, and that the addition of ammonia alone gives a great increase, we had concluded that this *field contained an abundance of all the mineral elements of plants* capable of assimilation, and that the reason why it produced only 18 bushels per acre, instead of 28, as when ammonia was used, was to be attributed to a lack of ammonia. In other words, that wheat on this soil, cultivated after the most approved methods, hand-hoed thrice in the spring, *abounding in all the mineral elements of plants*, was not able to *obtain sufficient ammonia* from the atmosphere for a maximum crop. Were this admitted, the dearly cherished mineral theory must be given up; and LIEBIG, therefore, endeavors to prove that the reason why only 18 bushels per acre were obtained, is attributable to a deficiency of available minerals. He asserts that the cause of the beneficial effect of the sulphate of ammonia is due to its *solvent* action on the phosphates of the soil; and that it simply or principally acted by rendering an increased amount of the mineral elements of the soil, capable of assimilation. We would ask, in reply, if maximum wheat crops were not obtained from lack of soluble phosphates, &c., why it was that an application of soluble phosphates, &c., did not increase the crop? They were used in various forms and proportions, without stint, yet they gave no increase, and LIEBIG's own patent wheat manure failed. If, moreover, sulphate of ammonia acts merely as a solvent of phosphates, &c., how does it happen that the large amount used on some of the turnip plots is attended with little or no increase, while soluble phosphates artificially applied, give an astonishing increase?

It is impossible to answer these questions, and accordingly LIEBIG endeavors to show that the increase of trunips, from an application of superphosphate of lime, is not due to the soluble phosphate of lime which it contains, but to the sulphate of lime necessarily associated with it. English farmers will be glad to learn that it is simply the sulphate of lime the superphosphate contains that benefits their turnip crop, and that they can obtain the same effect very much cheaper from gypsum or plaster. We have no doubt that half a million dollars worth of superphosphate was applied to the turnip crop of England last year, the greater portion of which might have been saved by a knowledge of the fact discovered by Professor LIEBIG!! Some will ask on what evidence our author bases this opinion. We answer, on one solitary result, taken from Mr. LAWES' experiments—a result in direct contradiction to the general indications of the investigation, and in opposition to the results of other experiments on turnips, with superphosphate, sulphate of lime, and sulphuric acid—a result, in short, which is *simply a typographical mistake*. LIEBIG says: "A like plot in 1845, which received 12 cwt. of gypsum, (residue from the preparation of tartaric acid,) and 10 cwt. of rape-cake,

* Our limited space has compelled us to leave out the results of repeated applications of potash, (of which the turnip ash contains some 40 per cent.,) soda, magnesia &c., but we may remark that they were attended with little or no benefit.

yielded 18 tons, 1 cwt of turnips, *six tons more* than those fields on which phosphoric acid was employed. * * What strange results do these facts offer,—in what incomprehensible contradiction do they stand to the views of Mr. LAWES." On referring to our copy of Mr. LAWES' opinion, we found a marginal note, made years ago, stating that the 18 tons, 1 cwt., should be 10 tons, 1 cwt. It is much to be regretted that this mistake was not marked in the copy sent Professor LIEBIG; or that he did not discover the error, as he might have done by referring to the tables on the two following pages. Few will be surprised, considering the immense amount of tabulation in Mr. LAWES' papers, that a printer should, in one instance, place an 8 instead of 0, but it will astonish many to find that on this *single mistake*, LIEBIG should adopt a view which is not only opposed to the general indications of the whole series of experiments, but is also at variance with the experience of every farmer who has used superphosphate of lime and sulphate of lime as a manure for turnips.

This error corrected, the opinion based upon it falls to the ground, and with it the idea that the beneficial effect of sulphate of ammonia on wheat is due to its rendering the phosphates of the soil soluble. Soluble phosphates greatly increased the turnip crop, but the *same soluble phosphates*, on similar soils, did not increase the wheat crop; sulphate of ammonia did not increase the turnip crop, but did greatly increase the wheat crop; therefore, sulphate of ammonia does not act simply in furnishing to the wheat plants soluble phosphates.

Mr. LAWES repeatedly alludes in his papers to the fact that though the increase of wheat over the unmanured plot was in pretty direct ratio to the quantity of ammonia supplied to the soil, yet that the increase was never so great as theoretical considerations would lead us to suppose. Thus, estimating a bushel of wheat and its proportion of straw, to contain a pound of nitrogen, it might be supposed that if nitrogen was wanted, a pound of nitrogen, applied in soluble ammonia salt, would give an extra bushel of wheat; but this is not the case. Without making any pretensions to settle the *exact* amount, Mr. LAWES estimates from the immense number of instances in which ammonia has been used, in various ways and proportions, in his experiments, that five times as much nitrogen, in the form of ammonia, is required to produce a bushel of wheat, as it contains when grown. This estimate has stood the test of many trials, and is in accordance with the well-ascertained effects of Peruvian guano on wheat. Mr. LAWES founds on this fact some very important practical suggestions, but which we cannot at this time refer to. LIEBIG *takes no notice of this opinion*, and refers to the loss of ammonia in these experiments, as though it had escaped the attention of Mr. LAWES, and as though he were the first to point it out; and he proceeds to show that the increase "*bears no relation whatever*" to the ammonia added to the soil. This is proving far too much, even for LIEBIG's own theory of the action of ammonia as a solvent; but let that pass. The method LIEBIG adopts to get at this result, is as follows: 60 lbs. of ammonia, say, give in 1844, an increase on the unmanured plot of 10 bushels. This increase only contains 15 lbs. of ammonia, and therefore LIEBIG estimates that "*beyond all doubt*," 45 lbs. of ammonia are left in the soil for the next crop. In 1845, 60 lbs. of ammonia again give an increase of 10 bushels, but LIEBIG adds to this the 45 lbs. which he assumes remain in the soil from the previous year, making 105 lbs.; and in this way he proceeds, adding the ammonia he supposes to remain in the soil to that applied each year, and from the figures obtained, proves that the increase bears no protion to the supply of ammonia! We believe this method of estimating the action of ammonia, fundamentally erroneous. Certainly we do not know of a single result in these or any other experiments, that shows the ammonia of soluble salts to remain in the soil over one year, when wheat is grown, and when sufficient minerals are present to enable the plants to take up all the ammonia they require. Let us suppose a case, and one which is clearly deducible from the experiments. The continuously unmanured plot gives 15 bushels of wheat per acre; a plot adjoining, dressed with 30 lbs. of ammonia, gives 20 bushels per acre; another lot dressed with 60 lbs. of ammonia, gives 25 bushels; another dressed with 90 lbs., gives 30 bushels; and another receiving 120 lbs., 35 bushels per acre. The next year, all these plots receive no manure, and the produce is the same on each, neither more nor less than that from the continuously unmanured plot. What deductions should we make from such facts? According to LIEBIG's view, the first plot would contain, the second year, no ammonia; the second plot would contain 24 lbs. of ammonia; the third 48 lbs., the fourth 72 lbs., and the fifth 96 lbs. of ammonia per acre. Now if this be true, surely the produce would not be alike on all the plots. A direct application of ammonia has always given a definite increase, and we cannot see why the ammonia remaining in the soil from the previous year should not also give an increased yield. The fact

that it does not is clearly established, not only by these experiments, but by the experience of hundreds of practical farmers, who have used salts of ammonia, Peruvian guano, &c.; and we feel warranted in concluding from these facts, that ammonia is all used up the first year; unless LIEBIG, or those who agree with him on this point, can bring forward better argument to the contrary, than the simple, unsustained assertion that it is "perfectly impossible."

Is it not more consistent with the facts of the case to suppose that the ammonia being quite solue, is all taken up the first year, and that in the growth of wheat, there is, for some purpose or other, *a great destruction of ammonia*? It is well known that plants give off oxygen, and in the absence of light, carbonic acid; why may they not also give off ammonia? Chemists have always had a difficulty in accounting for the manner in which silica is deposited on the straw of the wheat plant. Prof. WAY has shown that ammonia and silica in certain double salts, form slightly soluble compounds, and he suggests that in this form the silica and ammonia is taken up into the plant; and that when the silica is deposited, the ammonia evaporates into the air. Our object is not here to decide whether this be so or not; we wish merely to show that LIEBIG has no right to assume, as he has done, that it is "*perfectly impossible*" for plants to take up more ammonia than they contain when grown. He would have shown a better spirit, had he met the views of MR. LAWES and Prof. WAY on this point with some argument, rather than of ignoring them altogether, and reasoning as though nothing had been said in regard to it.

The whole question appears to us to turn on this very subject, which LIEBIG has entirely overlooked in his review of LAWES' experiments. If it be true that wheat and the other cereal grasses need for their production a much larger quantity of ammonia than they contain when grown, and if, on the other hand, turnips, beans, peas, tares, and clover do not, we have at once an explanation of the three gradually developed systems of rotation, which an enlightened experience has proved judicious. We see at once why two grain crops should not follow each other; why clover, and peas, and beans, are the best crops to precede wheat, and why the turnip, in the Norfolk system of British agriculture, is such an excellent crop to precede barley. Indeed, we do not know of one solitary well-established fact that is opposed to this view; and surely, if it be correct, nothing can be more important to a correct understanding of rational agriculture. It is true that it points to no revolution in our present system of culture—and in this respect will be less acceptable to all ultra reformers—but it explains the *rationale* of the most approved systems of rotation and general farm management, confirms what practical farmers have previously but indistinctly perceived, and urges them to carry out still further, and by more economical methods, a system of improved culture they have already commenced.

USEFUL HINTS.

To keep Potatoes in Cellars and Pits from Rotting.—You must be careful to dry them well at digging time on the barn floor, or other convenient place, for four or six days; then put some of them into the cellar or pit about one foot thick, and strew a little slaked lime over them; then another foot of potatoes, and another sprinkling of lime, and so on, till all your potatoes have been secured. They will take no harm when packed in this manner, though two thousand bushels should be placed in one heap.

To destroy Thistles or other noxious Weeds, either in beds otherwise.—Take four pounds of saltpetre, grind it fine, add two pounds of sulphur; mix these with one barrel of salt. In the spring, when the thistles are two or three inches high, apply this mixture by spreading it over the ground half an inch thick; be sure to cover all the surface of the ground with the mixture, and it would be well to extend it to at least one foot outside of the thistle beds, so that all the roots may be destroyed. Should there be any loose stones on the surface of the ground, they should be picked off. If the weather should prove to be dry for the first and second evenings after the application has been made, a little water or refuse pickle should be applied with a watering-pot. Should there, by any chance, one or two roots escape the mixture and sprout afterwards, or if you have any stray thistles scattered over your farm or lands, take a small phial filled with spirits of turpentine, and deposit one drop upon the top of the thistle; this will infallibly destroy it. The mixture of saltpetre, etc., will enrich the soil too much for grain crops for a season or two. The first planted, should be onions, potatoes, or turnips, to be followed by corn or other grain crops. It would be best to leave the ground undisturbed till late in the fall; then plow it for spring crops.

Food for Chickens.—Boiled potatoes mixed with coarse Indian meal, are, perhaps, the best food for fattening poultry. For laying hens, meat is necessa-

ry. Lime must also be within their reach at all times. Pepper has been found excellent to make hens lay. A recent writer says:—"I was clearing out some red pepper seeds, and threw the shucks promiscuously about. I soon observed hens picking them up and swallowing them with great avidity. They soon commenced laying eggs, though they had laid none for a month before. I fed regularly two or three times a week since then with red pepper, and they have never stopped laying summer or winter, spring or fall, except while they were hatching their chickens; and I am confident that by this method they may be made to lay the year round.

ROOT CROPS.

We are much pleased to notice the attention given by the farmers of this section to the cultivation of *root crops*. On nearly every farm we notice a patch of carrots, and our seedsmen say there never before was such a demand for turnip seed. We wish now to call attention to another most valuable root, especially so for milch cows;—we mean the

Parsnip.—*The soil may be heavier for parsnips than for carrots*, and they will even thrive on a strong clay, if rich, well pulverized and dry. Large crops can only be obtained on deeply fertile and well pulverized soil. They should be sown early, as frosts do not affect them, and they require a long time to come to maturity. Drilling, at a distance of 20 inches apart, is the proper mode of planting, and they should be thinned to a space of six or eight inches. It requires four or five pounds of seed per acre, which must be of the previous year's growth, as older does not readily vegetate. No preparation of the seed is necessary. The subsequent cultivation is similar to that of carrots, and they will generally yield more under the same circumstances of soil and tillage. They are little subject to disease or enemies.

The best variety for field culture, is the Isle of Jersey. The gathering should be deferred till the following spring, unless wanted for winter's use; as they keep best in the ground, where they are uninjured by the intense frost. But particular care must be observed in allowing no standing water on them, or they will rot. When taken up in the fall, the roots should neither be trimmed nor broken, nor should the tops be cut too near the root. They must be stored in a cool place and covered carefully with earth, as exposure to air or even moderate heat wilts them.

The parsnip is one of our most delicious table vegetables. It is an excellent food for swine, either raw or cooked, and for cattle, milch cows, and sheep, it is highly prized. Qualey says, "it is not as valuable for horses, for though it produces fat and a fine appearance, it causes them to sweat profusely; and if eaten when the shoot starts in the spring, it produces inflamation in the eyes and epiphora, or weeping." The leaves of both carrots and parsnips are good for cattle, either green or dried.

THE HESSIAN FLY AND THE WHEAT-HEAD FLY.

In the last volume on agriculture in the "Natural History of New York," Dr. Emmons has treated on the "Insects injurious to Vegetation." This is a very important subject to the cultivator of the earth, and much knowledge of it has not before been accessible by the people. Indeed, the description of insects is in most cases in learned treatises, and thus not attractive to most persons, so that the public needed a volume of a more popular character, and yet adequately scientific. Such is the volume already scattered over our State. If it is not absolutely perfect, it is important and full of interest. In the plates are many figures of insects which are often occurring in their season to the farmer, and which will commonly be recognized at once. Among these insects, those destructive to the wheat crop have possessed an especial interest this summer. Two of these are well known—the *Hessian Fly*, of which in different states are figures on plate IV., and the *Wheat-Head Fly*, readily known from its resemblance to the other, and yet clearly to be distinguished as a fly, and by its plan of depositing its eggs. Both of these are *fly-like*, having two wings and small *volaneus* attached, a body about the eighth of an inch long, and and a head nearly half as long as the body, and the wings spreading about one-fourth of an inch. So minute is the animal which may carry desolation over the country. "The very weakest among the tribes of animals are the greatest destroyers of the products of man's industry."

The Hessian fly, so called because it was introduced from Europe in the baggage of the Hessians, who were landed in 1776 by the British on Staten Island and Long Island, may be far more formidable and terrific in a country than an "army of Hessian troops." Although this insect was known in Europe long before our Revolution, it seems not to have been named till after its ravages had become great in some parts of our country. This was done in 1817 by our distinguished entomologist, Mr. Say.

He gave to the Hessian fly the characteristic scientific name of *Cecidomegia destructor*, because the destructive maggot hatched from the egg of this insect is at the joint of the wheat stalk, which there enlarges or swells somewhat into a gall-form. Hence it is that the insect has been called the wheat *gall-fly*.

In October, in this State, the fly is seen to deposit its eggs upon the leaf of the young plant a little above the ground. There the egg changes into a maggot which finds its way to, and its home at, the joint. There in the next spring it grows and destroys the force of the plant so that the seed is not formed and the culm is weak, and takes on the appearance to which the farmer has given the descriptive name of "*crinkled*" wheat. Then the maggot, or larva changes into the chrysalis, from which, ere long, comes forth the fly, to deposit new eggs in early summer, which pass the same round and send forth the fly which lays its eggs in autumn on the winter wheat.

This view involves two broods in a year, which seems to be maintained by Dr. Fitch, of Salem, who has written so fully on the Hessian fly, and by others; yet, it seems not to be decisively proved, as the spring fly may be only a portion which had not been developed at the usual season. At least, more observations should be made, and mistake shown to be wholly improbable. It is possible another insect may have been taken for this. Consult Dr. Fitch's several papers on this subject in the *American Quarterly Journal of Agriculture* for 1846-47. We are indebted to Dr. Fitch for an extended view of these depredators on this great necessary, the "staff of life."

Dr. Emmons mentions two methods of preventing the great increase of the Hessian fly. The one is "burning the stubble" after harvest, and the other is by "deep plowing" to bury the chrysalis so deep that the insect never can emerge to the light of day. The latter is certainly practicable;—the former must be effectual.

A third method has been employed in our country where the ravages of this fly have been very destructive, viz: ceasing to sow wheat for two or three years, so that the insect may die out for want of its peculiar home. This requires general agreement of the agriculturists over a large section.

The other insect destructive to wheat is also a *Cecidomegia*; but, as it lays its eggs in the heads of wheat and in contact with the kernel, which the maggot or larva devours, it is named *Cecidomegia tortici*, or, literally, the gall-fly of the wheat seed or kernel itself. This insect was named in Europe, where it has long been known, and from which it was doubtless imported in the straw and chaff, or perhaps wheat, into our country. It is said to have been first mentioned in the *New England Farmer* for 1820, and was detected in this state in 1828. To distinguish it by some common name from the Hessian fly it might be named the *Wheat-Head Fly*, as in the head of wheat the maggot works ruin; while the other might be called the *Wheat-Stem Fly*, as the maggot ruins the stem or culm itself. The terms Fly, or Wheat Fly, are not descriptive, as each is a fly, and each destroys wheat in its own peculiar way.

The maggot in the wheat-head is readily discovered, as it is yellow, and the chrysalis into which it changes is a bright yellow. In due time the chrysalis falls to the earth, where it lies till the next season, when it hatches into the fly itself, to repeat its work of destruction.

As the *C. tortici* feasts on the kernel in its soft state and on the milk, it has no means of piercing the hard shell of the seed; and if the maggot is developed too late, it will die of starvation in contact with the seed. Hence it is not a weevil—as that eats the ripe and hard kernel of seed, as the *rice weevil*.

Multitudes of the chrysalis are sometimes thrown out with the chaff in the cleaning of wheat, and may be destroyed by the burning of the chaff. Hogs also fatten on this animal in this state, while they effect its sure destruction.

There are several other species of *Cecidomegia* in our country, which are not known to be destructive to wheat.

It is an interesting fact in the Divine constitution of the animal world, that other animals devour those which may become dangerous to the interests of man. Thus the destroyers are held in check by others, and the balance of even insect life very nearly and more constantly maintained. The Hessian fly is preyed upon by several insects, and its young are often destroyed by other maggots before its destructive purpose is attained. C. D.

To Relieve Choked Cattle.—Mix a spoonful of gunpowder with enough hog's lard to form a ball the size of a hen's egg—open the animal's mouth, and after pulling out the tongue lightly, chuck the ball of lard and powder into the throat, let go the tongue, and the work is done. I have tried this in two instances, and it produced immediate relief.—*Country Gentleman.*

BIG HEAD.

Mr. Editor:—In the June number of the Farmer I saw an inquiry in respect to the origin and treatment of a disease in horses called the *Big Head*. An effectual and tried remedy is, as soon as the swelling on the side of the face appears, take six or eight grains of white arsnic, wrap it in fine paper as small as you can; make an incision in the skin, immediately over the hard tumor, and insert the paper containing the arsnic, and with a needle and thread make one stitch, tie the ends in a hard knot—bleed the horse and turn him in good pasture, or, if the weather is cold, put him in a stable, removed from other horses, and feed him on light food. In about six weeks the arsenic will have developed its efficacy; let nature have its course about one month longer, then the wound may soon be healed by common applications for that purpose. James Ansley.

Indiana Co., Pa.

RAIN—EVAPORATION AND FILTRATION.

We have before mentioned a paper, prepared for the Transactions of the New York State Agricultural Society for 1854, on this subject, by Hon. George Geddes. From an attentive perusal of it, we find it contains matter which would be very valuable to the farmer. Meteorogical facts have not received that attention from the agriculturist, and not until recently from the government, that they deserve. Mr. Geddes well remarks, that "One of the things to be looked at in selecting a new home is the rain-gauge, and the government would do the world a great favor to have rain-gauges kept at all the frontier posts, and at every station in the country, and publish the reports, property arranged in tables, for every work."

It has been ascertained from records kept in various parts of Europe and America, that there is annually more rain along the Atlantic coast than in the interior. But the wants of agriculture do not depend so much on the quantity of water as on the manner in which it falls. Thus, some districts which in the course of the year receive an unusual quantity of rain, suffer much from drouth. In England the annual fall of water is stated to be 32 inches. Along the Atlantic coast of the United States it is at different points from 38 to 40 inches, and in the State of New York, taking the average from about forty points of observation, it is 35 inches. Yet the climate of Britain is much more moist than that of the United States. There the number of rainy days is greater, and the rains more moderate than here. There is also a great variation in different parts of our own country. In the warmer and more level portions, rains often come in heavy showers, washing and packing the earth injuriously; in the cooler and more mountainous sections there is a regular condensation of vapor, and the rains fall lighter and in a longer space of time.

Some of the principles involved in evaporation and filtration, are given by Mr. G. in the following paragraphs:

When the frost leaves the ground in the spring it is full of water, and a cubic foot of this saturated earth is to water in its specific gravity as five to three; dried to the moisture suitable to have seed put in it, it *loses* one-twelfth of its weight; when perfectly dried it loses one-third.

Mr. Dalton, in making his experiments, came to the conclusion that when it had lost one-sixth of its weight by drying, it was not too dry to support vegetation. When it had lost two-ninths it appeared like top soil in summer. Hence every foot of earth in depth, so saturated, contains seven inches of water, and it may part with a quarter of its water, or even one-half, and not be too dry for supporting vegetation. This is the fund of water with which we start in the spring—say three inches in depth, within one foot of the top of the ground. Roots of plants go down lower than this if the soil is mellow and not flooded with water.

Mr. Dalton's experiments, made with a cylindrical vessel, ten inches in diameter, three feet deep, filled with gravel, sand, and soil—having a discharge pipe at the bottom, by which to measure the quantity of water that runs off, and which gave perfect drainage—the top of the soil being covered with grass, the whole buried so that the top was even with the ground, shows that earth that is moderately moist will take up three inches of water without carrying it beyond the point of saturation. This amount had in the preceding dry month been taken up by the plants and evaporated, and, without making the soil too dry, had so drawn upon it that it could imbibe three inches, which fell in four days.

Ordinary plowing does not bring into use more than six inches in depth of soil; extraordinary plowing may reach as low as one foot. Subsoiling and trenching to the depth of three feet would give to the plants all that Mr. Dalton claims for his experiments. Where ground is cultivated only six inches deep, it only holds, subject to the purposes of vegetation, (if no account is made of water rising up through the hard earth beneath), one inch and a half of water. If cultivation goes down one foot the quantity of available water is doubled. If the soil is broken up still deeper, though it may be that the roots of the plants may not go down beyond a foot, yet the water from lower down will rise up by capillary attraction, and supply the evaporation from the superior parts of the soil. So it results that while one foot of earth will hold for the uses of vegetation three inches of water, three feet will hold so much that it can part (without becoming too dry) with three inches, and then receive in the course of a four days' rain another three inches, without overflow or discharging from the drains beneath.

It will be noticed that in the estimates comprised in the last paragraph, no account is made of water rising from the earth below the depth of cultivation. Now it is evident that whether water will rise from below this or not, depends on the condition of the underlying strata. It is well known that some soil is naturally just in that state which favors capillary action. Other soil is in a different state, and needs changing, artificially. Further along, Mr. Geddes

speaks of soils in this happy "natural condition" which needs not drainage and subsoiling. He says:

In a country thoroughly underdrained to the depth of three feet, and deeply subsoiled, neither drouths or excessive rains are much feared by the cultivator; a large proportion of the water that falls is treasured up in his subterranean reservoirs, and any excess is carried off by his drains. Some districts of country have a soft, mellow soil, just clay enough, and just sand enough to give it proper consistency, and then this soil underdrained perfectly by an open gravel or shelly rock.

This is the natural condition of most of that part of this State that has been denominated by the geologists the "Onondaga Salt Group." It is a narrow strip of land, but little observed east of Madison county. It widens westward, and crosses the Niagara river at Grand Island. Most of this soil is drained just enough; but in some cases the shale comes so near to the top of the ground that the drainage is excessive, until by deep cultivation the underlying soft rock has been brought to the action of the frosts and atmosphere, and thus disintegrated and softened down and made soil. In other cases—as saucer-shaped vallies where the soil has washed from the surrounding hill sides—it is so deep over the shale, and made tenacious of water by being packed tight in the process of transportation and deposit, that draining is necessary. In some localities clay predominates, so as to require subsoiling and draining, but these are exceptions. In many other parts of the State there are soils that neither require underdraining or subsoil plowing, and the owners of these districts should be careful not to be carried off the balance of their own good judgment by the reports they see of the great utility of underdraining in Seneca county and other places, where a tenacious soil is underdrained by a tenacious rock or clay. Enough has been said in the previous pages of this article to show the utility of deep cultivation and thorough draining, where it is demanded by the nature of the soil, and it was thought equally necessary to warn the reader against the folly of laying out money in those cases where it would do no good.

Mr. GEDDES' farm, which, as to productiveness and permanent fertility, is one of the best we ever saw, is on this formation called the "Onondaga Salt Group." In repeated visits which we have had the pleasure of making to it, we have observed the great advantages of the physical texture of the soil to which he alludes. We invite particular attention to Mr. G.'s remarks, that this, as well as some soils in other districts, "neither requires underdraining or subsoil plowing." The caution which he interposes on this subject should be heeded by all farmers who design to use their brains in regulating their operations. Let "deep cultivation and thorough draining" be practised "*where it is demanded by the nature of the soil.*"

In the following extract Mr. GEDDES describes a state of things which we have frequently witnessed. The remarks will apply with special force to much of the land in the west part of Vermont, along Lake Champlain, of which our readers may recollect we have lately spoken:

Some soils do not appear to suffer from an excessive supply of water, when first put under cultivation, that afterwards require draining. This was the case in some parts of Onondaga county. When the soil was first put under the plow, it was lighter and more porous than it was after repeated cultivation—just as earth, by being removed from a cutting, in the construction of a road, to an embankment loses a part of its bulk; so that it is computed by engineers that it takes ten yards of earth, measured in a cutting, to make nine yards after it has settled in an embankment. Whoever has been engaged in the construction of post fences has observed this tendency of earth to pack together when it is moved. It is commonly said that a post can be put in the hole, and then all the earth that was dug out of it can be put in too. Perhaps another reason that these soils when new are dry enough, and afterwards require draining, is that the cavities and water courses produced by the roots of trees are filled up by cultivation.

THE CROPS AND PRICES.

POTATOES.—At Syracuse, potatoes are selling for 87 cents a bushel.

We hear that one of our householders has contracted for his potatoes the coming year, at *fifteen cents* per bushel.—*Syracuse Standard.*

And we are informed that a party in this city has contracted for several thousand bushels in Monroe county, at *fourteen* cents per bushel. The day of high prices of provisions is fast passing away.—*Albany Express.*

Such articles as the above meet us at every turn. We scarcely open a city paper, but we find that the editor has *heard* or been *informed* that flour will be cheaper than it has been for a century, and that potatoes will not be worth the digging. There appears to be a settled determination on the part of editors to *write down the price of provisions.* Perhaps they have entered into a conspiracy for this purpose. We need not inform our readers that all such reports as the purchase of potatoes in this country at fourteen cents a bushel, are false. We think the price of provisions must and should come down, but they will not decrease in value as fast, or become as low as many are led to suppose, from these false reports. We copy a very good article on this subject, from the *Rural New Yorker:*

"The *newspapers*, with their accustomed diligence in the public service, are hurrying up "good reports" of the present wheat crop. I have reason to remember that they did the same thing *last year*, and as I was then some *thirteen lunar months* younger than I now am, *I believed them! Editors*, as a class, are celebrated for poverty and a sanguine temperament. Twelve dollars a barrel for flour does not comport well with the price of newspapers. We ought not to think it strange that the men of the quill have *hoped* themselves into the belief that "*flour must come down.*" But *will it?* That is the question. "Illinois, Kentucky, Tennessee—the South and West generally, have bountiful harvests." "All other sections the same." By a singular stretch of

charity, we are expected to believe that these tourists and newspaper "letter-writers," who generally furnish the *data*, would *know a field of wheat if they should see it.* One thing is certain,—it requires a practiced eye to form even a tolerable judgment of what the yield will be from a casual survey. In the spring, the *bare* grounnd obtrudes itself upon our attention—a little later, "copious showers" make it all right. Look again—the surface is uneven. Get over the fence—the tallest wheat makes the most show; a bold front has shut out of view much that is *small and thin.* Add to this, the leading roads generally pass through the best cultivated country, and of course travelers are liable to be too favorably impressed.

"Of *other* sections I know nothing except from "hearsay," but of the State of New York I believe I do know something from actual observation and careful inquiry. I am satisfied that the yield in this State will be *one-fifth* less than a "*good crop.*" Why is this matter slurred over in "harvest reports?" Is the *failure*, marked and decided as it is, in the fine wheat section along lake Ontario, west of Rochester, of no acconnt? Can important portions of the fine counties of Monroe, Livingston, Genesee, Ontario, &c., &c., be cast out in our reckoning? Or has it come to this, that "*pure Genesee*" is brought *exclusively* from Wisconsin and Georgia? So, too, of the corn crop. Why is it not *stated*—for sensible men have known it these three weeks at least,—that the corn crop of New York will be *one-third* less than an average.

"Look in almost any public journal, and see how the article on "crops" is made up. In *wheat* matters, sections that *export* very little, and that of a poor quality, are quite as conspicuous as the noted wheat regions; in their list of authorities, the *Sundown Chronicle* and the *Catamount Express* are quoted with as much unction and emphasis as the *Ohio State Journal* and the Rochester dailies. As in patent medicines, it is the *number* of certificates that is relied upon.

"The buyers of wheat and flour, like "our party" in politics, have a "clear majority," and it is observable that there is a disposition to write and talk down the price of wheat. This article is written not to influence any man's judgment as to the quantity or value of the crop, but to ask farmers to examine all the facts for themselves, and then form opinions of their own. Of course the price must come to the world's standard. London and Liverpool will settle the question. With *war* and *universal scarcity* to begin with, nothing short of a concurrence of good crops in all or nearly all wheat growing regions, can bring the price to a low figure,—a concurrence that there is now not the slightest reason to expect. Prices being *up*, it is a very different matter from what it would be if they were *down.* As it is, it will require a decided surplus to bring them down—a surplus that exists, in all probability, only in the excited imagination of consumers of flour."

The crop of potatoes in this part of the State will be large. On high, or well drained land, potatoes look exceedingly fine; but unless we very much mistake the signs, we are again to be troubled with the *Potato Rot.*

MAKE FARM LIFE ATTRACTIVE.

To all our readers who wish to make farmers of their sons, we commend the following extract from an address delivered by Rev. F. D. HUNTINGTON:

"Why do your young men run, as by some universal instinct, from the farm, where they were born, to the city, where they so often learn to wish they had not been born any where? Chiefly—whatever explanation they may put forward as having a handsomer look—chiefly because on the farm there is supposed to be an inevitable doom to hard, monotonous, wearing bodily toil, from daylight to sundown, life through, with no room for mental expansion, or generous tastes, or social recreation; and secondly, because after all this labor, the farmer makes too little money. Nor will my faith in young men's natures suffer me to believe this is always a sordid calculation with them. For, in thinking of money, they think of it oftener as a means than an end. They want it for what it brings. On the farm, very frequently, are rooms without books, walls without pictures, manners without grace, clothes without fitness, and grounds without shaping or decoration. On the contrary, the city merchant buys a library and works of art, sends his children to schools where they learn to move with elegance as well as to cipher and parse, gets garments that are finer and fit, and is not so exhausted physically at nightfall as to prefer sleep to any company or book. He comes back into the country and lays out a beautiful estate, sometimes with statelier animals, and selecter fruits, and tidier fences and hedges, and more blooming gardens on it than his neighbor, who has all the while been staying there and making farming the business of his life. Now, it would be a hard task in persuasion to convince most young men that these things are not good, not desirable, and that the dollars which command them are not of the nature of an advantage. I confess I should be a bad subject for such persuasion myself. Besides, these things are all of the nature of picture-work; the boy cannot help seeing them; they work upon him while he stops on his way from pasture under the fragrant shrubbery, or peeps through the pickets at the mellow peaches and pears.

I know perfectly how apt his sanguine blood, and his ignorance of the ninety-odd failures in a city for every single success, are to put a fallacy into his plans and cheat his choice. But none the less it is true, what he goes to the city for is a chance, though but a chance, for certain means of refinement, liberality, and width in the whole style of life, such as scarcely a mere farmer about, in the old way of farming, has displayed. Who ever knew a confident and chivalrous youth to doubt he should be one of the five that succeed, though five hundred fail? And, moreover, many young men at that aspiring period of life, before the charm and glory of early ideals have faded off, thirst honestly for more stimulus to mental action, more enlarging ministries to thought, than they have found in rural places. This they dream of finding in the presence of crowds and the sharp collisions of trafic. Perhaps they dream delusions; but this is the feeling. Depend upon it, if you would hold your sons and brothers back from roaming away into the perilous centres, you must steadily

make three attempts—to abate the task-work of farming, to raise maximum crops and profits, and to surround your work with the exhilarations of intellectual progress. You must elevate the whole spirit of your vocation, for your vocation's sake, till no other can outstrip it in what most adorns and strengthens a civilized state."

Appropriate to the subject, is a story of our own, which we wrote some time since for another journal:

"A farmer and his wife, in easy circumstances, not a thousand miles from this, had an only son, who much to the sorrow of his parents, had imbibed a desire "to go to sea.' He had read of the raging billows—of strange people in strange lands—of Orange groves—of lands where the Pine-apple grows—of exciting scenes in capturing the whale—and his whole heart seemed set on seeing foreign lands and living on the ocean wave. In vain his parents endeavored to interest him in the operations of the farm. He worked, to be sure, but his heart was not in the work. It was a drudgery, and he longed for the time when he could bid farewell to parents and home, and see the world for himself. At that time a Horticultueal Society was established in the county, and at the first exhibition fruits and flowers of the finest kinds were displayed, many of them brought from a distance, and such as had never been seen in the neighborhood before. The young man attended this exhibition, and looked at the display with wonder and surprise. Nothing astonished him more than the lively, joyous interest, those engaged took in the arrangement of their several collections. While he had looked upon every thing connected with the cultivation of the soil as a heartless drudgery, here even the ladies appeared to engage in it with a zeal and pleasure he could hardly account for. One class of flowers particularly attracted his notice; he procured a few plants—planted them, and nursed and watched them, and waited anxiously and impatiently for the coming bloom. In due time his plants blossomed, and their extraordinary beauty repaid him for his his toil. He carried off the prize at the next show. Elated at his success, and the pleasure it afforded him, he increased his collection—forgot all about the sea and strange lands—and became one of the most enthusiastic and intelligent cultivators, and the most successful competitor for prizes at the shows of the Horticultural Society. He now takes hold of farming in earnest—aims at the finest crops; and the parents reap in the society, perhaps the salvation of their son, and in the better management of the farm, the happy influence of flowers upon the young mind, and the benefits of horticultural societies."

FREEDOM FROM DANGER IN DESCENDING WELLS

In looking over our exchanges, we have been surprised at the number of accidents and deaths caused by imprudence in descending wells. We had proposed to write a short article on this subject, but the last number of the *Scientific American* furnishes us a good article on the subject, which we copy:

"The cause of death in such cases is carbonic acid gas, or as it is familiarly called, 'choke damp.' It prevents respiration; it extinguishes flame, and is generally found at the bottom of wells, it being of greater specific gravity than air. It is generated by vegetable decomposition, and also by combustion, and commonly finds its way into wells from seams in the strata of the earth, from adjacent places where chemical action is going on. Any well may be descended with perfect safety by the use of quick or fresh burned lime, recently slacked, or without being slacked. When there is choke damp in the well, it can easily be known by letting down a lamp or candle by a cord. If the light burns freely, it is a sign that no choke damp is there, and the well may be entered with safety; but if the candle burns dimly, or is extinguished, it is a sign of danger. To remove this gas so as to render it innoxious to the person entering the well, all that has to be done is simply to throw down some pieces of fresh burned lime into the water, and agitate it with the bucket on the rope, or with a pole. Another plan is to slack the lime in a small heap, mix it with water in a tub, and throw down three or four pailsful into the well. Or, if it is desired to enter the well and not disturb the water in it, take about half a pailful of slacked lime, mix it quickly with cold water in a small tub, and lower it down into the well by cords attached to the lugs, so as to rest on the surface of the water. The contents of this tub must be stirred up for ten minutes with a pole in the well, and then left suspended for an hour. When drawn up, any person may descend the well safety. The philosophy of this is, that moist lime has a great affinity for carbonic acid gas, and it therefore absorbs it rapidly from the atmosphere. If we take some fresh slacked lime, and stir it up in a vessel containing cold water, and allow it to remain so for five or six hours, a hard scale, like that of thin ice, will be found on the top of the water. This scale is carbonate of lime, formed by the absorption of carbonic acid gas from the atmosphere (a very small quantity of carbonic acid is mixed with all the air we breathe) and the scale is a thin pellicle of stone—marble. The lime of good mortar becomes hard by returning to its former condition of limestone, by the absorption of carbonic acid gas from the atmosphere, and the formation of a thin scale of carbonate of lime on a lime vat, affords evidence of the manner in which sedimentary rocks were formed. No person need be afraid of descending into a well if he pursues the directions given. By letting down a candle into the well, after the lime has been allowed to play its part, its light will indicate when it is safe to descend, For the safety of life, we hope this information will be circulated far and near."

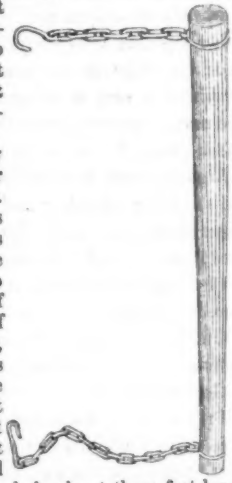
Galls from the Harness or Saddle.—Major Long, in his valuable account of his expedition to the Rocky Mountains, says, that his party found white lead moistened with milk, to succeed better than anything else in preventing the bad effects of the galls on the horses' backs, in their march over the plains that border the mountains. Its effects in smoothing or soothing the irritated and inflamed surface was admirable.

Hay.—A bale of hay is 300 lbs.; 100 cubic feet in a solid mow of hay, will weigh a ton.

STUMP PULLER.

As soon as haying is over, or at any rate before "snow flies," some of our thrifty farmers will want to get into some of their fields and claw out the stumps and old snags; the remains of the former forest, which have been so long in their way. In order to assist them in this work, we give them a cut and description of a very simple contrivance for pulling stumps, which any one who has two strong chains and a stout log, can get up in a short time. It is from the *New England Farmer:*

Here is a contrivance so simple that any farmer may make one before breakfast; and the cost is so trifling, that if it does not operate to his entire satisfaction, he will have no regrets at having given it a fair trial. We find it sketched in the *Wisconsin* and *Iowa Farmer.*



"We noticed a very simple contrivance for pulling stumps, which Mr. EDGERTON says works very well indeed. It is so simple in its structure that we commend it to those wishing anything of the kind. It consists of a log of strong timber, from ten to twelve inches in diameter at the large end, and eight to ten at the smaller, and about sixteen or twenty feet long. To the larger end is attached a very heavy chain about three feet long with a very large and strong hook at the free end while at the other there is a ring sufficiently large to slip over the larger end of the log or lever. To the small end of the lever a yoke of cattle is hitched. The manner of using it is as simple as the machine, and acts on the principle of some tooth-hooks of the dentist. The large hook is caught hold of some of the stronger roots, and the cattle are then driven round the stump so as to wind up the short, heavy chain, and then continue on in the even tenor of their way till the stump gives itself and surrenders its position. Thus they are removed, easily and rapidly. A rough sketch of this '*cork screw*,' as it was technically called, we here give."

SEEDING TO GRASS IN AUTUMN.

WHERE it is desired to keep land uninterruptedly in grass, autumn seeding may be practiced with advantage. Under favorable circumstances, there is by this mode no loss of the hay crop, even for one season. But all seasons are not equally favorable for seeding at this time. Last year, for instance, the ground was so dry as to be difficult to plow, in some cases, and if the seed was sown, it either failed to germinate, or came up too scattering.

At the present time, however, the moisture of the ground will render working it comparatively easy, and the seed will start vigorously at once. No time should be lost after the hay is off, in inverting the sward. If this is done during damp, warm weather, decomposition takes place immediately, which aids the growth of the new grass. The ground, plowed under such circumstances, will probably retain water enough to support the young crop. The moisture will also promote the action of any manure which may be applied as a dressing for the grass. Whatever fertilizing matter is used, it should be in such a condition that it can be readily incorporated with the soil, on the inverted furrows, as it will thus afford much more benefit to the grass—giving it a strength of root which will enable it to withstand the winter, and insuring its early and vigorous growth the following season.

As to the time of seeding, perhaps from the first to the middle of September, as a general rule, may be preferable, but we should not hesitate to sow a few days earlier or later, according to convenience.

Herdsgrass (*phleum pratense*) and red-top (*agrostis*) are the kinds of grass usually sown in autumn. Red clover will do well on land which is so dry that the roots are not liable to be thrown out by frost. Twelve quarts of herdsgrass and sixteen quarts of clean red-top are not too much to sow in the acre, without other seed. The *large* red-top, which is considerably later in ripening than the *small* red-top, or "fine-top," is preferable, if a considerable bulk of the hay is to be herdsgrass, as the two are in a proper state for cutting nearly at the same time.—*Boston Cultivator.*

CORN AND PORK.

A WRITER in the *Ohio Report* for 1852, makes a calculation as to the cost of pork fed on corn:

An experiment by S. B. ANDREW gives 1050 lbs. of gross increase from 100 bushels of corn. One hundred thrifty hogs were weighed and put up into a pen. They were fed for 100 days as much corn as they would eat. The average consumption was 100 bushels every six days. The average gross increase per hog for the 100 days was 175 lbs.; or at the rate of 1¾ lbs. per day. According to this, a bushel of corn will produce 16½ lbs. Throwing off 1-5 to corn, at the net weight, gives 8 2-5 lbs. of pork as the product of one bushel of corn. If 8 2-5 lbs. of pork are made by 1 bushel, or 56 lbs. of corn, 1 lb. of pork is the product of 6⅔ lbs. of corn.

From an experiment made by SAMUEL LINN, of this county, with 58 hogs, as reported in the Patent Office Report for 1849, 6½ lbs. of corn produced 1 lb. of pork.

Assuming that it requires 6⅔ lbs. of corn to make 1 lb. of pork, the cost of its production will be seen from the following table. The labor of feeding and taking care of the hogs is not included in the estimate.

When corn costs 12½c. per bushel, pork costs 1¼c. per lb.; at 17c. per bushel, 2c. per lb.; at 25c. per bushel, 3c. per lb.; at 33c. per bushel, 4c. per lb.; at 42c. per bushel, 5c. per lb.

The following table shows what the farmer realizes for his corn, when sold in the form of pork:

When pork sells for 3c. per lb. it makes the price of corn 25c. a bushel; at 4c. per lb., 33c. a bushel; at 5c. per lb., 42c. a bushel; at 6c. per lb., 50c. a bushel.—*Prairie Farmer.*

Horticultural Department.

RIPENING OF APPLES AND PEARS.

As many farmers and orchardists will be busy in gathering their fruit crop for winter use during this and the coming month, we may be able to give some useful hints.

To have sound and perfect apples through the winter months, it is absolutely necessary that much care should be given in gathering. This should be deferred with the winter fruit as late as practicable and avoid early severe frosts. The fruit should be picked from the tree by means of ladders, and placed in baskets, when it should be assorted and packed at once carefully in new tight barrels. These barrels, after heading, should be removed on sleds to a shed through which the air circulates freely, or they might be protected easily from the dew and rain by placing boards over them. They may be allowed to remain in this situation a week or more, or until the cold is too severe, when they should be transferred to a cool, dry cellar, and into which air may be admitted in mild weather. The barrels should then be placed in tiers upon their sides, numbering upon each head the quality of the fruit contained in the barrel, and the name. The small imperfect but sound fruit is treated in the same manner, and marked No. 2, indicating an inferior sort. Apples which are intended for market are frequently assorted into three different classes, the *best*, *good*, and *inferior*—the former being all selected fruit; the *good* containing sound fruit of medium or small specimens; the third being so poor that the fruit is wholly unfit for market, and suitable only for stock or immediate family use. All of this is easily done, yet many whole orchards bring but an inferior price for want of this care.

Too often we find that winter apples are left upon the tree very late in the autumn, frequently till they have been exposed to two or three severe frosts; when convenient they are shaken from the trees, the good and bad poured into barrels or open wagons, of perhaps half a dozen sorts. Afterwards they are emptied promiscuously into bins, barrels, or open boxes, where they are expected to keep well through winter. This is a most ruinous method, yet it is practised by at least three-fourths of the farmers; or they adopt another course equally as wasteful in securing the fruit.

Fully one-half is lost by this method of gathering, as the fruit ripens prematurely and decays rapidly by being bruised. The decay is very much hastened where several sorts are mixed promiscuously together, ripening at as many different seasons. Those kinds, too, which do not come to maturity till late in the winter or early in the spring, are turned and handled many times when assorting those which are in season during November and December.

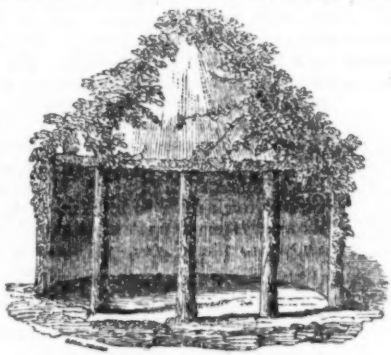
Light is found unfavorable to the keeping of fruit, and should be excluded: and it is often noticed that where fruit, particularly pears, is placed in a room above ground, and oftentimes in a very dry cellar, and left exposed to the air they shrivel. They should therefore be kept either in barrels or tight boxes. About the time pears are needed for use they can be removed to a room of higher temperature and kept as closely as before in drawers or boxes, where they will ripen very speedily, and will possess much finer flavor than if allowed to ripen in a cooler place. By treating pears in this way, one variety can be made to last a long time.

Summer pears ought to be gathered a week before ripe; early autumn kinds about ten days or more; late fall and winter varieties ought to be allowed to hang upon the trees as long as they may and escape frost.

There is yet very much to learn in ripening winter pears well, more particularly the late sorts. But few orchardists are there who have been successful in ripening such sorts as *Easter Beurre*, *Josephine de Malines*, *Prince's St. Germain*, and many other late winter kinds. In fact, it is found almost impossible with the fruit rooms, conveniencies, and cellars now in ordinary use. Some few enterprising persons in this country have expended considerable sums in buildings, etc., to ripen winter sorts, and in the main succeed well; but it is quite useless for farmers and many others to plant trees of such varieties of fruits that require so much care in ripening, unless they are prepared to embark into it extensively, erect the necessary buildings, and give close attention to it; then it will pay and prove quite remunerative; otherwise all trials or experiments will be quite unsatisfactory.

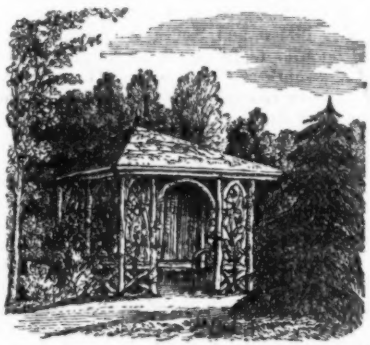
SUMMER HOUSES.

Perhaps on no subject connected with horticulture is there more need of information than suitable decorations for the garden, or *Garden Furniture*, if we may be allowed the expressive term, embracing arbors, seats trellises, and other structures of use and ornament in the garden. How often, when viewing gardens of the greatest pretensions, are we compelled to walk from one end to the other, through beautiful



shady walks and quiet nooks, without finding a resting place—no rustic seat inviting us to enjoy to it fullest extent the quiet beauty of the scene.

Among all garden ornaments the most useful and beautiful are summer houses. Every garden should have its little resort where the weary admirer of its



beauties can find rest. These should be made as simple and natural as possible, without any attempt at costly display.

> "Insult not Nature with absurd expense,
> Nor spoil her simple charms by vain pretense;
> Weigh well the subject—be with caution bold;
> Profuse of genius—not profuse of gold."

We give two very pretty designs—the first from an English work, and the other from a drawing we took of a summer house built by the lamented A. J. Downing, on his own grounds. Pleasant, yet mournful, is the remembrance of the last moments we spent in this beautiful retreat in company with its great and good builder.

There is nothing so pretty for summer houses or garden seats as rustic work—the limbs of trees with the bark on—it is simple and appropriate.

FRUIT.

To compensate us somewhat for the loss of peaches in this section, we shall have abundance of plums and apples. The curculio seems to have almost ceased his destructive labors. Perhaps the severe cold of last winter was unfavorable to them. If so, with our great loss we have some gain. We never saw summer apples, especially the *Red Astracan*, as fine as at the present time. The cold, wet summer seems unfavorable to the growth of pears. They cannot attain much more than half their usual size.

VEGETABLE PHYSIOLOGY.

Mr. Editor:—I send you a short account of an operation of one of the laws that govern the vegetable kingdom, that came under my notice a few years since,—not as a *lusus naturæ*, or any thing new, but to call the attention of the naturalist to notice a law that probably has, and will govern every living tree that ever did, or will wave a living bough in its ambient atmosphere. Some years ago I noticed a very luxuriant apple tree in my orchard, about fourteen inches in diameter, then growing near the west bank of the Muskingum river, in Washington county, Ohio, began to show a blight of the extremities of some of its loftiest boughs on one side of the tree only, as if singed or scathed by fire, and of a reddish-yellow tinge, which gradually affected other boughs on the same side only, in succession from ten to twenty days. At length it occurred to my mind that some wrong might be in progress under the tree. On an examination among the tall grass, some two or three barrels of Kenawha salt was found on the ground about eight feet from the tree. The leakages from the barrels had corroded the grass and apple tree roots under them. The barrels were removed forthwith, and the blight soon ceased its progress. The above case seems to admonish us that the sap of the roots one side of a tree, has but little or nothing to do with or for the opposite side; or, in other words, plants and trees have but a little or no general circulation of their liquids, as in general is assigned to living animal bodies. Probably the attention of others has been called to things similar.

Brighton, N. Y. E. Bowen, M. D.

THE YUCCAS—AS HARDY ORNAMENTAL PLANTS.

THERE are few plants so ornamental as several of the Yuccas, and yet we seldom see them employed in any conspicuous way, in any of our pleasure grounds or flower gardens. Here and there, perhaps, in the gardens of our curious amateurs, one sees a solitary plant, but beds, groups, and masses, never. Yet there are no plants so altogether satisfactory in many respects, as two or three species of Yucca that we can name.

The Yuccas are mostly southern plants—the name *Yucca* being a vernacular application in St. Domingo. Some of the species, however, are natives of the United States—from Virginia to Florida, and far from being tender, they are hardier than many really northern plants. *Yucca flaccida, angustifolia* and *filamentosa*, bear a temperature of 10° or 15° below zero of Fahrenheit, and Y. gloriosa 6° below, without being at all injured.

THE ADAM'S NEEDLE, OR YUCCA GLORIOSA.

As they grow with great facility in any rich, light soil, and are easily propagated by division of the roots, there is no reason why they should not be cultivated in every flower garden. April, and the first half of May, are the best season for transplanting the roots.

The Yuccas belong to the *lilly* tribe, in the natural system of botany, and the tall stem, (branched like a tapering pyramid,) of superb lilly-like flowers, of a creamy white color, that each plant throws up in mid-summer, forms one of the most remarkable embellishments of the flower garden or shrubbery. But a great merit of the Yuccas, over most herbaceous plants, is the constant beauty of the foliage, in fact of the whole plant, all the year round. The general appearance of the plant is not unlike that of the Agaves, or Century Aloes, (to which they are allied,) only the leaves are narrower—being only an inch or two broad. These leaves retain their deep green verdure summer and winter, and being systematically arranged on the plant, and handsome in themselves, they are as strikingly ornamental among the snows of winter, as in mid-summer. A *winter garden*, such as we have several times alluded to in these pages, would, beside evergreen trees, be most appropriately planted into beds or groups of Yuccas, to cheat the season out of its dreariness. We shall notice a few of the sorts most easily obtained at the nurseries, and most suitable for the gardens of the northern States.

I. YUCCA GLORIOSA, or *Adam's Needle.*—This is the largest and most striking of the hardy Yuccas. It is, in fact, an evergreen shrub, growing two to five feet high, with its woody stem or trunk clothed with leaves almost to the ground. The end of each leaf is terminated by a dark spine, which has given rise to the popular name of "Adam's Needle." The leaves are broad, stiff, and dark green, and have much of the picturesque effect of those of the Aloe. The flower stalk is generally about four feet high, branching out symmetrically on every side, (see fig. from *Arb. Brit.*,) but in strong plants is frequently much higher than a man's head. The blossoms, which open in July and August, are bell-shaped, pale white within, marked by a pale purple stripe on the outside of the petals.

The Adams' Needle is a native of both North and South America, being found wild as far north as Virginia, and as far south as Carthagena. Though not growing naturally, farther north than the former State, it is perfectly hardy as far north as Lake Erie—or wherever the peach ripens regularly. About Washington, we have noticed it in the fine pleasure grounds of WM. STONE, Esq., growing most luxuriantly, springing up and flowering along the sides of the garden walks, with little or no care. About New York it succeeds best in a perfectly dry subsoil—a deep *sandy* loam. Where it needs any protection, it is only that of a few branches of evergreens to keep off the sun. There is a variety of *Y. gloriosa* called *superba*—rather rarely seen, even in our best collections, which is still finer—being of taller and more tree-like growth, and bearing a greater profusion of pure white flowers.

II. YUCCA FILAMENTOSA, or *Adam's Thread.*—This variety differs mainly from the former, in having no spines at the ends of the leaves, but instead, the foliage is irregularly serrated, and edged with long threads, which hang down two or three inches long. The same popular notion which coupled the idea of ADAM'S NEEDLE with the thorn at the end of the leaves of *Y. Gloriosa*, has found a corresponding thread on the leaves of this species. It is a native of

Virginia; has stood many winters perfectly uninjured in the open borders of our garden on the Hudson. Its growth, however, seems slower, and it produces flowers more rarely than the Adam's Needle. Still, as both the foliage and flowers are quite ornamental, it is worthy of a place in every good garden. It flowers in September, the blossoms being whiter, and growing more closely to the stalk, than those of *Y. gloriosa*.

III. Yucca Flaccida, or *the free blooming Yucca*.—This is one of the most popular and commonly cultivated sorts in our gardens—growing and blooming with as much ease as a cabbage. It is a native of Georgia—but is hardy as an oak all over the northern states. The specific name, *flaccida*, is given from the greater pliancy of the leaves, which, instead of being perfectly stiff, like some of the other species, are a little weak, and frequently bend in the middle. This species has no stem or trunk, and the reader may get a good general idea of its appearance when in bloom, by imagining the foregoing figure of *Y. gloriosa*, with the foliage springing directly out of the ground—the leaves, however, being narrower, and more numerous, and the flower stem about half the height. There are slender threads along the edges of the leaves. This Yucca blooms in our northern gardens as freely as the common white lilly—throwing up its beautiful pyramidal flower stalks, two or three feet high, about the end of June, and bearing a profusion of fine milk-white flowers, all the month of July. It is one of our favorite evergreen plants, beautiful at all seasons.

IV. Yucca angustifolia, *the narrow leaved Yucca*.—A fine hardy species, found by Nuttall on the banks of the Missouri—and grows and blooms in our gardens exceedingly well. The foliage is long and narrow, egded with threads, and quite stiff. The leaves spring out of the ground without a stem, like those of the last variety. The stalk is straight, and not branched, like the preceding sorts, the flower bells more oblong, and the flowers a pale greenish white. It blooms at mid-summer, and is a very distinct ornamental species. Messrs. Hogg, of New York, have, we believe, cultivated it with success in the open border, for many years.

There are several other species of Yucca which are less known, but which would doubtless succeed in our gardens. *Yucca draconii*—the Dragon Yucca a native of Carolina, growing eight or ten feet high, which is hardy in England, would no doubt be so here; but though it is to be found in many of our green-house collections, we do not hear of any one having made trial of it in the open air. There is a variety of *Y. gloriosa* with striped leaves, which is very ornamental. *Y. stricta*, and *Y. glaucessens* are an interesting species, natives of the southern states, that would well repay the labor of cultivation.

We have said enough, however, to call attention to this really noble genus of evergreen plants—whose superb flowers and striking foliage, render them more valuable as ornaments to lawns, gardens, or rock work, than almost any others that we could name. As they are mostly natives of the sea shore, they are also especially valuable to decorate the grounds of the marine cottages and villas that are springing up at Newport, and other sea-side watering places. Most of the sorts we have described may be had at very moderate prices, of our leading plant growers, and nothing but ignorance of their real merits, prevents their being much more generally cultivated.—A. J. Downing.

BOTANICAL GARDENS.

Botanical Gardens are on the Continent attached to all universities or collegiate establishments where the medical portion of the instruction imparted is considered as of any importance. For it is there universally admitted that botany, or the knowledge of plants from which the great majority of the most valuable medicaments are prepared, as well as chemistry, which teaches the mode of extracting the medicinal principle to the best advantage, are two most essential branches of a medical and especially of a pharmaceutical education; and a botanical garden, when well conducted with reference to its special object, is found to be of essential service in such a course of botanical lectures as the student in medicine requires. It is also of great assistance to the professor who would give to his pupils such an interest in botany as should induce them more or less to pursue it beyond the lecture-room, either as an independent science, or as a branch of general knowledge, to be applied as occasion may point out in the various paths of life and business they may follow.

Personal visits, in many cases several times repeated during the last 20 or 30 years, to upwards of 60 of these continental botanic gardens from Barcelona and Palermo to Upsala and Petersburgh, from Paris and Brussels to Constantinople and Odessa, have led us to take much interest in the question of the real objects and practical working of these establishments. Watching such accounts of them as appear more especially in the German journals, official reports or extra-official complaints, we have been led to an examination of the causes why, notwithstanding the recognized utility of many of them, there are yet others which appear far from answering the expectations entertained respecting them as helps to useful instruction in medical or general botany.

Leaving out of the question such large establishments as the Botanic Gardens of Paris, Berlin, Petersburgh, Vienna, &c., where we every now and then hear of splendid outlays (not even then always backed by corresponding annual expenditure,) the universal complaint at all these gardens is want of funds. But is the best use always made of the funds which they have? Are not sometimes the main objects interfered with or entirely lost sight of in the vain attempt to supply commercially the deficient means? And is there not, generally speaking, a desire rather to do much than to do well?—to crowd into the smallest space every variety of arrangement, scientific or practical, that has been thought of in the most magnificently appointed establishment, and above all to swell their lists with as large a number of names as possible, without caring for the reality or correctness of these names, or for the value or worthlessness of the articles represented? These are topics upon which it may be useful to enter into some further details.—*G. B. in Gardners' Chronicle.*

Ladies' Department.

THE LUXURIES OF THE GARDEN.

What can be more delightful to the lover of good things than the fruits in their season. First comes the *strawberry*, all smothered in cream; then *early cherries*, followed by *raspberries*, *currants*, and *gooseberries*, and *early apples*, and *peaches*, and *melons*. These fruits furnish a succession of delights, enough to satisfy the most determined epicure.

Then there are the vegetables. First the *lettuce*, followed by *radishes*, all tender and crisp, when properly grown; then *pie plant*, and *cucumbers*, and *peas*, and *early potatoes*, and *sweet corn*, and *tomatoes*.

Only those who have these things growing in their own garden, where they can be obtained when needed, fresh feom the soil, know the luxury of good living.]

No one can be truly said to LIVE who has not a GARDEN. None but those who have enjoyed it can appreciate the satisfaction—the luxury—of sitting down to a table spread with the fruit of one's own planting and culture. A bunch of radishes—a few heads of lettuce—taken from the garden of a summer's morning for breakfast; or a mess of green peas or sweet corn, is quite a different affair from the same articles brought in large quantities from market in a *dying condition*, to be put away in the cellar for use. And a plate of strawberries or raspberries lose none of their peculiar flavor by passing directly from the *border* to the *cream* without being jolted about in baskets until they have lost all form and comeliness. And yet, how many in the smaller cities and villages of our country, and possessing every facility for a good garden, either through indolence or ignorance, are deprived of this source of comfort? And how many farmers, with enough land lying waste to furnish them with most of the luxuries of life, are content to plod on in the even tenor of their way, never raising their tastes above the "*pork and beans*" of their fathers.

These remarks were called out by a communication long since received from a lady, who, after giving an account of the difficulty she had in inducing her husband to undertake the cultivation of a garden, writes as follows:

"As soon as the frost was out of the ground, I went to work. When my husband saw I was in earnest, and ready to do the work 'single handed and alone,' if necessary, he was ready to help me. So we had the ground manured, took the ashes from my leaches, and spread them. Then it was well spaded up. I then had the strawberry bed thinned out by digging about two-thirds under, leaving them in rows, and placing manure and ashes between the rows. Next, I made a new bed of strawberries, and trimmed and staked the raspberry bushes, pruned and dug around the currants, trees, rhubarb, &c. After this, I sowed peas, beans, flowers, and so on.

"Now for the result—the reward of all this labor. Last summer we had a good garden; but I kept improving, and it is of the present (or rather past,) summer that I wish to speak, as it was not till this year that things came to perfection. In the first place, I had rhubarb large and fine, while before my rhubarb stalks, from the very same roots, were so small and worthless, that I usually preferred buying to using my own. Then lettuce, and radishes, and early peas. A little later, the tall sugar peas, and other peas, as much finer than the marrowfat as the marrowfat is finer than the common field pea. Following in quick succession, came cucumbers and summer squashes, and beets, and sweet corn, and Lima beans. The excellence of these Lima beans I had no idea of before. I shall have quite a store of vegetables to put in the cellar, for winter use, such as winter squashes, &c. All this, and a good deal more I have not mentioned in the vegetable line.

"Now, a word for the fruits. The first fruit was the early strawberries. I had *enough* of this fruit during the whole season. Next followed white and red Antwerp raspberries, and then currants. The white Dutch were large and sweet—very different from the small sour things I have usually bought. I like the English black very much for cooking. Gooseberries I used for cooking, from the time they were about half grown until they ripened. The larger fruits have done well, with the exception of plums. I have had plenty of fine grapes from an old Isabella vine pruned as recommended in your interesting journal.

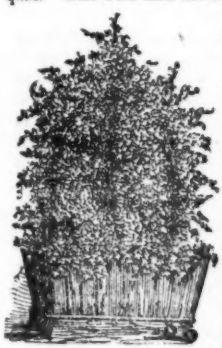
"And now, having told my experience in gardening, I can say I am well paid for all my trouble. I now possess more knowledge of the proper way of cultivating fruits, &c., than I ever expected to possess; and though I did not learn it all from the GENESEE FARMER, yet, as it was your paper that first set me at work in my garden—that first induced me to observe the nature of plants, and the practice of those who cultivate them the best—that first gave me a taste for reading on the subject, that opened to my view a new creation, and showed me the wonders and mysteries, and beauties of the vegetable world,—I can

say that I would not be deprived of the benefit I have gained from it, for the price of a hundred years' subscription. EMILY."

THE IVY AS A PARLOR PLANT.

IN our last we gave in this department some instruction for the growth of parlor plants. We now introduce to the notice of the ladies the beautiful IVY, the favorite of the poets, in an excellent article, by J. JAY SMITH, of Germantown, Pennsylvania. Mr. SMITH practices as he preaches, and his grounds are beautifully ornamented with this plant. Mr. S. informed us on a recent visit, that he raised several hundred young plants every year, which he distributed among his neighbors, free, for the purpose of encouraging their growth. We saw more of the ivy in Germantown than we have seen in all the county besides.

"One of the most beautiful plants for a drawing-room, parlor, library, or dining-room, is the Giant Ivy. In Germany, and particularly at Berlin, it is treated as a window plant, where it serve for a curtain or screen. As it bears perfectly furnace or even stove heat, provided it is not exposed to the immediate action of the fire or flue; and as it is always of the deepest green, and grows rapidly during the winter; we consider it a valuable piece of information to impart to our readers, that they may have at least one plant that will succeed in living rooms. It should have abundance of water, though never so much that the roots will be regularly covered over with the liquid. The box and mode of planting, it will be well to attend to. Our drawing represents one about six feet high by two and a half feet broad, in the parlor of a friend, which is one dense mass of dark green foliage, except the points in growth; these are of a delicate pea-color. The whole appearance at a front window, either from an inside or outside view, is rich and spring-like. There is another advantage possessed by this plant as an in-door ornament. if the windows of the room happen to be raised by Molly, when she sweeps, in frosty weather, the Ivy is so hardy a plant as not to be absolutely killed in a few moments, as would be the case with the wax-plant, and many others. In short, the ivy is the best house-plant we have ever seen.



GIANT IVY.

"In the present instance, a box lined with tin, in which books were received from London, was used; four rollers being inserted at the corners, to make it easily movable. To prevent its having too great weight, blocks of charcoal, covered over with leaf mold, were placed in the bottom. This also gave a suitable foundation, in which the roots delight. In one corner a small strip was nailed, making a well, into which a stick could be thrust to ascertain how much water had accumulated; and rarely the box is turned on its side to discharge any surplus. This box externally is covered with strips of oak bark; a longer piece being used in the middle of the ends and sides, to represent handles. This is all very simple and easy in practice, and once obtained will last for a long series of years, being moved into a shady spot in summer, and brought in-doors at early frost.

Two or three winters nursing will bring the plant to the size we have mentioned; and if a little care is exercised to train it on one side of the trellis, it can be at any time cut from its strings, and a larger trellis supplied, as its size increases. The supports may be of oak, cut thin, interspersed with bamboo cross-pieces. In time it may require shifting to a larger case; and will then, if you do not choose to trim it to suit yous window or corner, form a large screen in a drawing-room, sufficiently dense to divide conversation parties from each other; or several of them placed around the walls of a room used for dancing, &c., would form elegant ornaments. They would always impart a warm and summerish hue, and should thus be trained for every conservatory, as a background or terminating view. No person of taste ever sees our friend's fine specimen, without expressing a wish to possess just such another.

The soil suited to this plant is a mixture of good garden mold and thoroughly decayed leaves. Properly planted in this, the rapidity of the growth of the Giant Ivy will be very satisfactory, whether in a parlar box, or against a wall or tree. We should, however, remark that it will be best to take a well rooted plant from a pot; the ivy requiring a year at least to obtain a firm foundation in the earth, after which there is scarcely any limit to its progress.

"The Giant ivy has not been generally introduced in America; but every one who has *coached* through Ireland will retain vivid recollections of its effects on the eye. In our opinion it is one of the great points in the scenery, and helps materially to give that beautiful island its designation of "Green Isle of the Ocean." We should be glad to see it much more generally introduced around our mansions. Even in cities, a single ivy plant in a small garden, running over and clinging to an old tree or the walls, is a perpetual enjoyment. Where no old tree exists, you can easily bring to the spot most seen from the window a stump ten or twenty feet high, and plant it for the purpose; or employ a trellis, taking care in the latter case to tie up the new growth regularly. The ivy succeeds best in the open air when planted on the north or northeast side of what it is intended to cover. If you have a coppice or piece of woods accessible to your country mansion, plant a few roots near the trees every spring. They will sometimes run among the leaves on the ground, making a superb appearance, and ever and anon will catch hold of the bark and run "high in air." when you can but remark with admiration the different size and appearance of the beautiful foliage; that on the ground will be smaller and of a different hue from that which has got up into, and rejoices in, more light and air."

Youth's Department.

THE TWO FARMER BOYS.

BY W. H. GARDNER.

On one of those sultry summer days in June, when all nature seems imploring the Great Disposer of events for water to relieve the earth of its thirst, and prevent its becoming barren from drouth, two boys were at work in fields adjoining. They were farmer boys, and thus far through life had passed much of their leisure time together.

A scene of beauty, of surpassing beauty, surrounds them. It was a home scene—a scene which, go where they will in after life, will ever remain enstamped upon the tablet of the memory. Broad acres of beautiful farming land, covered with luxuriant growing crops, was displayed in all their magnificent beauty before them. 'Twas such a scene as only farmers behold, and few besides farmers are fully capable of enjoying.

Let us approach and make the acquaintance of these farmer boys, who we have said were at work. Martin Brown is the son of an affluent farmer;—Jerry Freeman was the child of poor parents, but he is now an orphan. Martin has had superior advantages; Jerry's opportunities for acquiring knowledge have been meagre. But hear them that ye may judge; for they are now approaching the place where we stand by the fence, each at the same time.

"A fine day," declares Jerry, leaning on the handles of his cultivator; raising his hat and wiping the sweat from his high forehead.

"A plague on such fine days—so hot—corn all drying up—I would like to know what there is particularly fine about this day?" replies Martin.

"We have a beautiful place to work in here,"—at the same time, with his eye, noticing the surrounding beauties of hill and valley—"and can see so much to enjoy," observed Jerry.

"Well, I would like to know who could enjoy this, and be hard at work! I can see little to enjoy," responds Martin.

"Why, we may enjoy the scene about us—the lovely view of wide spreading fields of grain, meadow and forest; and yonder are the distant hills, looking so beautifully blue beyond the clouds."

"Pshaw! Jerry," answered his companion, with a derisive laugh, "I can see nothing in the view you have pointed out, worthy a look or thought. We *have nothing in this town* worthy one's attention, and I am getting tired of the intolerable lonesome life I am leading."

"I am contented," responded Jerry, "I find much time for reading, and subjects of wonder, inquiry, and admiration daily present themselves to my notice." A laugh followed this expression of content by Jerry, and the boys separated.

We have heard enough of this conversation, as above, to learn that while at work different thoughts, feelings, and incentives to action possess them. Observe closely and you will discover in the look, air, and manner of the one evidences of contentment, and a desire to become acquainted with more of the world than what his own eyes rest upon—speaking plainer than words, that he is happy. The other wears no look of sunshine, his eye gives forth no light, and the manner in which he does his work, shows it to be prompted by any love save that of his calling.

An hour later and we will discover the secret of this difference. The air which has hitherto been sultry, begins to move—the corn leaves, which were wilted, rolled, and dry, begin to rustle—and a roar of distant thunder breaks the stillness. Low down in the western horizon dark clouds begin to appear—they increase, and in dark masses roll on, covering the sky. The wind freshens—the leaves turn up—the swallow flies rapidly, darting here and there—the thunder roars more continuously—'twill rain—it rains—much needed, welcome rain is falling. The boys, anticipating but a slight shower, retreat to a grove near by, where, sheltered by the leafy branches, they await its cessation.

"How beautiful," remarked Jerry, as the rain came pouring down, and falling on the parched earth, raised clouds of misty vapor.

"Beautiful," exclaimed his friend, with an accent not to be misunderstood. "'Fog goes up skipping, rain will come down dripping.' Come, Jerry, let us turn out our horses and go up to the corners; for I think it will rain all the remainder of the day."

"No," replies the other. "I have reading at home, and would rather read than pass my hours in such conversation as I would hear at the corners!"

"*Reading!*" replies his friend, with another peculiar emphasis; "let your reading go till some other time; we will have fun up there, with the boys who always assemble there on rainy days." Jerry was firm, and Martin ceased to urge. Here is the secret revealed. Martin has lost all relish for thought or observation, and is only happy while in company with others of kindred habits. Reading he hates, and he goes up to the corners.

Who has not witnessed the change that now came over Martin Brown. It was not a rapid change—great changes never are. It was a gradual, radical change. First it blinded him to the beauties of nature, and religion, and then to the enjoyments of home, until, finally, he saw beauty only in the achievements of the clown, or in being the chief actor in a bar-room club, or some kindred amusement. * * Great was the change in taste, worth, and influence, in ten years. Arrived at manhood, and assuming its responsibility and duties, Mr. Freeman was a man of knowledge, talent, worth, and influence. Mr. Brown was yet a loafer—a loafer in language, habit, and appearance,—his influence gone, his person neglected, his property squandered; he presented a sad spectacle of the result of spending his youthful leisure hours "*at the corners.*"

We are preparing a series of interesting and instructive articles for this department, and shall commence their publication in the next number. Our space for this department is small, but we shall always see that it is well filled; and in most of the numbers shall give the youth a fine and appropriate engraving.

Editor's Table.

OURSELVES.—The publisher of the FARMER is very grateful to his friends for the very flattering reception he has received. Modesty only prevents him from publishing extracts from some of the flattering letters now before him. Old subscribers are returning to their "first love," and from present appearances, we shall not much longer be able to furnish our old friends with the complete volume for this year, as we are fast using up the sets. We shall not endeavor to speak our gratitude, but show it by good works—by making the GENESEE FARMER more worthy the support and confidence of the intelligent farmers of this goodly land—and their wives, and sons, and daughters.

TO ALL WHO BUY FRUIT TREES.—For several years the publisher of the GENESEE FARMER has been in the habit of attending to the wants of his friends in all parts of the country. He has supplied orders for Seeds, Implements, Books, Fruit Trees, &c., without charging one cent for time and labor employed in this work. The business has, however, some much increased on his hands, that he has of late spent days together in searching for and shipping articles desired by distant correspondents, and in some cases an increase in the price, or something of that kind, has compelled him to put his hand in his own pocket to make up the deficiency. These outlays, though too small in themselves to make any account of, have in the aggregate been large. He has now, however, made such arrangements as will enable him to serve his friends just as well, and better, and make a profit for his trouble. All the readers of the GENESEE FARMER, therefore, who are about to plant Trees or Shrubs, and intend to get their stock from this neighborhood, can send their orders to the publisher of the GENESEE FARMER, who will see that they are filled properly and correctly, and with the very best trees the market affords. So send on your orders, and we will see that you are fairly dealt with.

NOTES OF TRAVEL.—During the past month we have made several excursions into the country. We visited Orleans, Niagara, and Livingston counties. We found hay injured much, and of the wheat, as far as we could ascertain after a most diligent investigation, about seventeen per cent. was grown. Immense quantities of corn on low ground, we found entirely destroyed. A farmer in Niagara county estimated that 1,000 acres in that county planted to corn was utterly worthless. Corn on high or well drained ground looked well.

GOV. HUNT is forming a delightful home near Lockport. His grounds, carriage house, grape house, and all things that make a complete country home, are in good taste, and in a few years this will be one of the finest places in the State.

W. P. TOWNSEND, Esq., has a fine Nursery adjoining the grounds of Gov. HUNT. He is a great lover of pears, and a very successful cultivator. His trees, however, have suffered much from blight this season.

We should give further notes of our observations in this direction, but being accompanied on our excursion by the Editor of the *Country Gentleman*, we prefer taking a notice of the trip from that Journal:

About two years since we had the pleasure of spending a day with Ex-Governor HUNT, on his delightfully located farm, near Lockport. Mr. H. was then commencing, with the assistance of Mr. JAS. VICK, of the GENESEE FARMER, a number of improvements in the grounds around his residence. Last week we paid Mr. HUNT another visit, and was agreeably surprised at the change that had taken place. The house is situated about five hundred feet from the road, on the summit of a gentle slope. The lower portion of the farm has been thoroughly underdrained, and what was once an eye-sore is now covered with beautiful green-sward, dotted over with young but thrifty trees. A fine gravelled carriage road winds through these up the slope to the house and farm buildings, and the newly formed but well kept lawn, studded over with flower knots and choice ornamental trees and shrubs, contrasts pleasantly with an adjoining orchard of dwarf pear and other trees loaded with beautiful and delicious fruit. Wire fences with iron supporters, have taken the place of the time-honored but not very pictutesque Virginia rails. This is a great improvement. The wire fences do not intercept the view, and the whole farm will in a few years have the appearance of a beautiful English park, worthy the residence of one whom his political opponents could designate by no worse name than that of "The Country Gentleman." An osage orange hedge, planted in the spring of 154, looks exceedingly thrifty and handsome. It stood the last severe winter uninjured. In one hundred rods only sixty plants have died. Mr. BRANCROFT, of Medina, furnishes the plants, sets them and fills up vacancies should any of the plants die, for fifty cents per rod.

Adjoining the farm of Gov. HUNT, Dr. TOWNSEND & SON have a fine farm and nursery of upwards of 200 acres. They have the finest collection of dwarf pear trees that we have seen for some time; the pear blight, however, is making sad havoc on some of the varieties, especially the *Glout Morceau*. A row of trees of this variety growing by the side of a row of *Louise bonne* of *Jersey* was nearly all destroyed, while the latter was not injured. Here, as elsewhere, the *Bartlett* is apt to break off, at this season of the year, at the union of the pear with the quince stock. We counted no less than six fine trees, loaded with fruit, blown over in a few rods. There is little advantage in dwarfing the *Bartlett*, as it will come into bearing quite early enough without. Dr. TOWNSEND has had it bear in three years from the bud on the pear stock.

The corn crop in this county has been seriously injured by the cold rains. Dr. T. says "there are thousands of acres that have never had a plow or cultivator in the fields since they were planted." We saw many such fields not only in this county, but everywhere we have been. The weeds are in many places quite as high as the corn. Surely two such years as 1854 and 5, will teach farmers the value of underdraining. Last year the corn on properly drained and cultivated land was but slightly injured by drouth, while that on land needing underdraining was not half a crop; this year the corn on drained land is rioting in almost tropical luxuriance, while that on wet undrained soil is a failure; and what is true of corn is also true of other farm produce. It is impossible to estimate the immense loss the country has sustained the last two years, from the neglect of underdraining. Instead of urging farmers to "sow one acre more," we would advise them to underdrain one field more, as the best means of raising cheap food for the million.

AGRICULTURAL ORATORS.—At the New Hampshire State Fair, Prof. C. B. HADDOCK, of Hanover; at New York, Gov. WRIGHT, of Indiana; at New Jersey, Prof. J. A. PORTER, of New Haven; at Pennsylvania, Hon. F. WATTS; at Illinois, Hon. D. J. BAKER; at Maine, Prof. J. A. NASH, of Amherst.

This is quite an improvement on some previous years. All who speak on this subject should be competent to teach.

AGRICULTURAL BOOKS AND PAPERS FOR PREMIUMS.—The Ohio State Agricultural Society have resolved to award several hundred copies of the *Ohio Farmer* and *Ohio Cultivator* as premiums at their next exhibition. Many of the county societies in the different States include considerable numbers of agricultural periodicals in their prizes, and the Clinton county (N. Y.) Society has adopted as a rule that one-half of all its premiums shall be paid in books or papers—the books and papers to be selected by the persons to whom the awards are made—that is, where a prize of $10 is awarded, $5 will be paid in cash, and $5 in agricultural, horticultural, or mechanical books. The Brookfield Agricultural Society, Madison county, N. Y., offers copies of the leading agricultural journals.

The Putnam County (Indiana) Agricultural Society offers a very large number of agricultural journals as premiums; and an old friend there writes us—"The GENESEE FARMER has been well remembered by our agricultural society.

WATER PIPES.—A correspondent wishes to know if any cheaper pipe than lead can now be had for conducting water from a spring to his house. We once saw an excellent earthen pipe, so made, that the ends were placed one inside of the other, and then cemented. It was made at Bloomfield, in this State. Who can give the desired information.

DANSVILLE.—We paid a visit to this beautiful rural village the past month. Corn and potatoes look very fine, and the oats never were better. MAXWELL, RAMSDEN & Co., have just commenced a Nursery in this place, and their young stock looks exceedingly fine.

MILLET.—We see small patches of Millet growing in all sections of the country. On its value, information is needed. We hope some of our readers will give us their experience this fall. Ascertain how much you raise on an acre, and then its value as compared with other crops.

LUNAR INFLUNNCE.—The New England Agricultural Journals are pretty generally discussing the influence of the moon on the growth of plants, &c. If they produce any more light on the subject, we will give our readers its benefit.

THE ENGLISH SKY-LARK.—Some ten years since, an English gentleman released a pair of sky-larks, on Long Island, and they appear to have survived our rigorous winters, as their notes are now occasionally heard on the island.

ELIJAH STARK, Esq., of Versailles, Indiana, writes as follows. on the 16th of July:—"We have just passed through our wheat harvest, and the yield is fine for this country. Our prospects for good crops generally, are very flattering at this time."

ONE pair of Pigs, according to ALLMUTT, will increase in six years to one hundred and nineteen thousand one hundred and sixty nine—taking the increase at fourteen times per annum. A pair of sheep in the same time would be but sixty-four.

FARMING IN WISCONSIN.—A gentleman in Walworth Co., Wisconsin, writes us as follows:

The pages of the FARMER are interesting. They already begin to open up to me (a novice in Agriculture) the hidden mysteries of "thriving by the plow." Having been engaged for nearly twenty years in a laborious and confining practice of the legal profession, and tiring of its drain upon the physical energies, and its excess of mental effort, without a corresponding exercise of the body, I have left it, purchased a farm, and am trying to engage in the "more ennobling" pursuit of a farmer; therefore your publication is a welcome visitor. I have already seen many suggestions in it by which I design to profit.

I am located in Walworth, Walworth Co., Wis., and it is probably one of the finest agricultural sections of the Western country. The soil is rich, yet I fear it is beginning to deteriorate from the truant system, or science, which many of our farmers evince in the management of their farms. It seems to me that every farmer should look upon his farm as an indulgent friend, from which he may always *liberally* borrow, but must ever bear in mind the necessity of promptly restoring the principal in due time. It is the most natural thing in the world that our crops should annually decrease in quantity, when the life-giving principle is not annually returned to the soil. The Chinch bug is hurting our wheat in this section of the country very much. Corn, though rather backward hitherto, is now recuperating, and promises a good crop. Oats are abundant.

Yours truly, H. W. CLARKE.

TWO ACRE FARM.—The article recently in the *Farmer* giving an account of a "one acre farm," has led me to think I might possibly make a statement of facts that would be valuable, and I forward the same to you, hoping you will use it just as it deserves.

Nine years ago last spring I came into possession of a two acre farm, and at that time it was barely possible to get one ton of hay from the whole of it, such was the state of cultivation it was in. It was all in mowing at the time, except one-eighth of an acre that I sowed oats on, and they were so small that a good stout grasshopper could eat the heads off by standing on tiptoe. Circumstances prevented me from making much improvement on it until 1849 or '50, and now for the results of the past dry season;

2½ tons hay, at $3 per ton	$20 00
12 bushels corn, at 80 cents per bush.	9 60
Corn fodder	1 00
2 loads pumpkins	1 00
21 bush. potatoes, 30c.	6 30
2 bush. beans, $1.50	3 00
38 bush. carrots, 30c.	11 40
32 bush. turnips, 20c.	6 40
10 bush. graft apples, 50c.	5 00
Garden sauce	5 00
Growth of 140 standard apple, plum, cherry, and pear trees, 10c. each	14 00
Growth 250 nursery trees, 2d year, 5c. each	12 50
" 1,100 " 1st year 3c. each	33 00
" 1,000 seedlings, ½c. each	5 00
Total	$133 20

Perhaps some may think it is impossible to have so much on so small a surface. I would just say that my beans and carrots grew amongst the nursery trees, and the most of the turnips amongst the potatoes. On one small patch I raised a good crop of green peas, potatoes and turnips; the peas were planted in the hills with the potatoes, and the turnips set both ways between the hills, getting three good crops on the same land in the same season, and neither crop appeared to injure the other—at least they all did well.

Now if this will stimulate another two-acre farmer to do the like out of nothing, I have my reward.—*New Eng. Farmer.*

PEACHES.—The peach crop in New Jersey, says the Newark *Mercury*, it is expected will be heavy in proportion to the number of trees; the trees are, in fact, too full. Many trees, it is said, were killed last winter, and there are not, probably, one-half the peach trees in the State there were four or five years ago.

United States Agricultural Society—Circular.—A grand National Exhibition of Stock—Horses, Cattle, Sheep and Swine—open to competition to all the States of the Union, and to the British Provinces, will be held by the United States Agricultural Society, in the city of Boston, on Tuesday, Wednesday, Thursday and Friday, October 23d, 24th, 25th and 26th.

Twenty thousand dollars have been guaranteed by patriotic gentlemen of Boston and its vicinity to defray the expenses; the city of Boston has generously granted to the Society for present use, a fine public square of fifty acres; and ten thousand dollars will be offered in Premiums, in the various departments.

The previous Exhibitions of this Society—at Springfield, Mass., in 1853, and at Springfield, Ohio, in 1854—were eminently successful, and no efforts will be spared to make the present Show, combining as it does, the Four Great Departments of Farming Stock, superior to its predecessors.

The Premium List, with the Rules of the Exhibition will be forwarded to all who will address the President, or Secretary, at Boston, to that effect.

It is earnestly hoped that all Breeders, and owners of Fine Stock will feel it to be a duty, as it certainly is for their interest, to contribute to the Show.

The List of Entries, Exhibitors and Award of Premiums, and all the proceedings of the Exhibition, will be published in the Journal of the Society, for 1855. Annual members of the Society, who desire to receive the Journal, should remember to renew their subscriptions.

Marshall P. Wilder, President.
William S. King, Secretary.
Boston, August, 1855.

Melon Apple.—A late number of the *Horticulturist* has a beautiful cut of this apple, which is now obtaing so great celebrity in New York and the east. We have never seen but a single specimen of the apple. About nine years ago a friend returning from Central New York, brought us some specimens of different varieties of fruit, and among them some Northern Spys, over which he seemed to desire us to be much elated. After tasting these, we came upon a rich, red, good sized, symmetrical apple, and which seemed to us to excel any apple we had ever eaten. On enquiring the name of it, we were told it was a new variety called the "Melon" apple. We have never forgotten that fruit, and are not surprised at the celebrity it is now attaining. Judging by that specimen, it is as much superior to the Northern Spy as the Spy is to a cucumber. True, a further acquaintance with it might modify our opinion of it somewhat; but we are ready to say of it, as we have said of single good speeches, that the man who could make one such ought to be able to make more.—*Prairie Farmer.*

The editor of the *Prairie Farmer*, if only to show his good taste, should have been *properly elated* at tasting a *good Northern Spy*. But then, the "Melon" is the king of apples. It is among apples what trout is among fishes. It has no superior.

Buff Color on Cotton.—Copperas and lime makes a very good buff color, and very cheap. The goods are generally run through the lime water at the commencement. About one pound of copperas, (sulphate of iron,) will dye ten pounds of cotton a deep buff. It is best to give the goods a number of dips. A dark buff cannot be produced by giving the full strength of the iron at one dip. The color is an oxyde of iron. The goods are of a green color when they come out of the copperas liquor, but become yellowish as they absorb oxygen from the air. They have therefore to be aired well every dip. The lime and copperas impart a harshness to the goods, and they therefore require to be run through strong soap suds, to soften their fibre.

By adding about two ounces of sugar of lead to every pound of copperas, a color little inferior to that produced by the nitrate of iron is the result.—*Scientific American.*

Horsemanship.—On Thursday it is proposed to have an amateur exhibition of horsemanship, open to all the world. For this purpose, the executive committee have placed the great driving ring at the disposal of this editor, who invites a general participation in this delightful exercise. The Board offer no premiums in this class, but we hope to make such arrangements as will be satisfactory to every man. We hope to see at least a hundred side-saddles on that occasion, besides the "Pony Brigade," made up of Young America in blue roundabouts. Particulars will be announced hereafter.

The *Ohio Cultivator* gives the above as a part of the programme at the State Fair. We must say that it looks like running the thing into the ground. If the object is to ridicule State Fairs, it is all very well.

Guernsey Parsnip.—The parsnip is a biennial plant; the root is very long and conical; a delicious and sweet food when boiled for the table. A superior food for cattle. Cows fed on parsnips yield milk in abundance, and of extra quality. The Guernsey is an improved variety.—*Exchange Paper.*

Thousands of hogs are fattened every year on the island of Guernsey, on the parsnip alone. We saw scores of shiploads of hogs brought to England, and on ship-board, and after their arrival until sold to the butchers, they were fed on the parsnip alone. This root should be more generally cultivated.

PRICES OF FLOUR FOR TWENTY YEARS,

IN THE MONTHS OF JANUARY, FEBRUARY, MARCH, AND APRIL.

	January.	February.	March.	April.
1836,	7 25	7 50	7 37½	7 50
1837,	10 12½	10 00	11 25	10 75
1838,	8 75	8 25	8 00	8 25
1839,	8 87½	8 93¾	9 00	8 50
1840,	5 87½	6 37½	5 75	5 62½
1841,	4 93¾	4 87½	4 75	4 92½
1842,	5 87½	7 43¾	6 12½	6 25
1843,	4 56¼	4 37½	4 75	5 12½
1844,	4 62½	4 82¼	4 93¾	4 70¾
1845,	4 68¾	4 84¾	4 81¼	4 75
1846,	4 66	4 56	4 76	4 62
1847,	5 12	7 00	7 12½	7 62
1848,	7 87	6 25	6 12½	5 75
1849,	9 00	5 87	6 00	5 60
1850,	4 50	5 50	5 56	5 50
1851,	5 00	5 00	4 75	5 00
1852,	4 56	4 62	4 52	4 31
1853,	5 56	5 50	5 00	4 56
1854,	7 87	9 60	9 00	9 75
1855,	12 00	12 50	11 75	13 00

WEIGHTS

OF SUNDRY AGRICULTURAL PRODUCTS, AND OTHER ARTICLES OF USE TO THE FARMER.

Wheat,	60	pounds	per bushel.
Shelled corn,	56	do	do
Rye,	56	do	do
Oats,	32	do	do
Barley,	47	do	do
Clover,	60	do	do
Timothy,	45	do	do
Flax seed,	56	do	do
Hemp,	44	do	do
Blue grass,	14	do	do
Buckwheat,	48	do	do
Peas,	64	do	do
Beans,	63	do	do

Hedges.—A few days since we examined a hedge at the Nursery of William Reid, of Elizabethtown, N. J., which seemed to be impassible to both men and animals. The plant used is the *American Locust*, and the hedge five years old. It had been regularly shortened in each year. Unlike the Osage Orange, the roots do not extend to a great distance, and it is both hardy and lasting.—*Working Farmer.*

WORTH KNOWING.—One pound of green copperas (cost seven cents) dissolved in one quart of water and poured down a privy, will effectually concentrate and distroy the foulest smells. For water-closets on board ships and steamboats, about hotels and other places, there is nothing so nice to cleanse and purify those places, as simple green copperas, dissolved; and for sick rooms, it may be placed under the bed in any thing which will hold water, and thus render a hospital or other places for the sick, free from unpleasant smells. For butchers' stalls, fish markets, slaughter houses, sinks, and wherever there are putrid and offensive gases, dissolve copperas and sprinkle it about, and in a few days the "bad smell" will pass away. If a cat, rat or mouse dies about the house and sends forth an offensive gas, place some dissolved copperas in a cup or jar, anywhere within "smelling distance," and the cure is sure. I have known a stock of dry goods which were nearly spoiled by a "skunk" under a store, to be cleaned and restored simply by sprinkling dissolved copperas about the floor.—*Salem Gazette.*

CURE FOR WASP STINGS.—Some unfortunate, last year, while picking peaches, was stung in the finger by a yellow wasp. The wound caused effusion of blood, and inflamed the arm to the shoulder. Saleratus, made into a *paste* with water, was soon applied as a poultice, and in half an hour had so neutralized the acid poison, that the swelling had entirely gone down, and nothing remained but the soreness occasioned by the puncture. This application has proved better than liquid ammonia, so far as a limited trial has proved, and is probably the best remedy for stings generally. It is important that the nearest alkaline substance at hand should be applied till a better can be found, whether it be ammonia, or even paste of fresh ashes. In the absence of all these, a mud poultice is an excellent remedy. —*Buffalo Democracy.*

WARTS.—The oil from the outside shell of walnuts or butternuts will cure warts by a few applications.

ADVERTISEMENTS,

To secure insertion in the FARMER, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers. TERMS—Two Dollars for every hundred words, each insertion, PAID IN ADVANCE.

A CHANCE TO MAKE MONEY.

PROFITABLE AND HONORABLE EMPLOYMENT.

THE subscriber is desirous of having an agent to each county and town of the Union. A capital of from $5 to $10 only will be required, and anything like an efficient, energetic man can make from three to five dollars per day;—some of the Agents are realizing twice that sum. Every information will be given by addressing, with a stamp to pay return letter,

WM. A. KINSLER,
Sept. 1, 1855. Box 1228, Philadelphia, Pa., Post Office.

DURHAM CATTLE AND OTHER STOCK AT PRIVATE SALE.

THE subscriber will sell twenty fine head of Short Horns of both sexes and various ages. Among them are several Bull Calves from my premium Bull, Hubback. The Cows and Heifers have also been served by him.

Also, a superior lot of Jacks and Jennets, and a choice selection of South Down Sheep.

Animals purchased previous to Sept. 25th can be delivered at Cleveland, Detroit or Chicago at the time of the Mich. and Illinois State Fairs.

I may be found at home except from the 9th to the 22d of Sept., and the 1st to the 16th of Oct. SETH A. BUSHNELL,
Sept. 1t* Hartford, Trumbull Co., Ohio, Aug. 19, 1855.

PREMIUM STRAWBERRIES

WILLIAM R. PRINCE & CO., FLUSHING, N. Y.,

WILL now supply all their splendid varieties of Strawberries, including those which have rivalled Hovey's Seedling, and every other kind exhibited. A Descriptive Catalogue, with prices, will be sent to applicants.

N. B.—A new Catalogue of Bulbous Flowers, and of all new Plants, now ready for applicants.

Sept. 1.—2t.

TO FARMERS AND ALL OTHERS INTERESED IN AGRICULTURE, HORTICULTURE, &c.

WILL BE PUBLISHED, IN OCTOBER, 1855.

THE YEAR BOOK OF AGRICULTURE;

OR,

The Annual of Agricultural Progress and Discovery, For 1855.

Exhibiting the most important discoveries and improvements in
Agricultural Mechanics.
Agricultural and Horticultural Botany.
Agricultural and Economic Geology.
Agricultural Zoology, Metercology, etc.
Together with
Statistics of American Growth and Production.
A List of Recent Agricultural Publications.
Agricultural Patents, with Notes by the Editor, on the Progress of American and Foreign Agriculture, for the Year 1855.

BY DAVID A. WELLS, A. M.
Member of the Boston Society of Natural History, formerly Chemist to the Ohio State Board of Agriculture; Editor of the Annual of Scientific Discovery, Familiar Science, &c., &c.

It is evinent that a publication of this character, givining a complete and condensed view of the Progress of every Department of Agricultural Science, free from technical and unnecessarily scientific descriptions, and systematically arranged so as to present at one view all recent Agricultural Facts, Discoveries, Theories and Applications, must be a most acceptable volume to every one interested in the Cultivation of the Soil, or the Diffusion of Useful Knowledge.

THE "YEAR BOOK OF AGRICULTURE"

will be published in a handsome octavo volume, comprising upwards of 300 pages, and will contain an elegant Steel Portrait of a Distinguished Agriculturist, together with Fine Illustrations of NEW AGRICULTURAL MACHINES, STOCK, FRUIT, &c., together with a series of

BEAUTIFULLY COLORED ENGRAVINGS.

Although the publication of this work will be attended with very heavy expenses, it will be issued at the low price of $1,50, thereby enabling every FARMER and PLANTER to posses a copy:

On receipt of the published price it will be sent free per mail, to any part of the United States. As the sales will be very large, all orders should be sent immediately.

A LIBERAL REDUCTION TO CLUBS.

Address, CHILDS & PETERSON, 124 Arch St., Philadelphia.
☞ Agents wanted to sell the above valuable work.
September 1.

W. T. & E. SMITH,

GENEVA NURSERY, GENENA, N. Y.

To Nurserymen and Dealers in Fruit & Nrnament Trees, Seedlings, &c.

WE offer for sale a fine lot of well grown Trees and Seedling Plants:

100,000 Apple, one year old, fine growth, of all the best leading varieties,	$ 25 00	per 1,000.
100,000 Apple Trees for orchard planting, three to five years growth,	100 00	" "
25,000 Cherry Trees, two years growth,	$110 to 130 00	" "
10,000 " " one year old,	80 00	" "
20,000 Dwarf Pears,	250 00	" "
10,100 Horse Chesnut, five to nine feet,		
10,000 European M. Ash,		
10,000 Hybrid Perpetual Roses, budded on the best Maneth Stock,		

SEEDLINGS.

200,000 Cherry, one year old, extra large, ten to twenty-four inches,	$4 to 5 00	" "
100,000 Apple, two years' growth	5 00	" "
50,000 " one " "	3 50	" "
20,000 Horse Plum, one year's growth	12 00	" "
60,000 Am. Arbovitia,	$30 to 30 00	" "
50,000 Osage Orange, two to three years,	$5 to 6 00	" "

Orders received to furnish Apple Seedlings, grafted in root, best leading varieties, for spring of 1856, at $10 per 1,000.

Orders solicited as early as possible. A wholesale or retail Catalogue for one cent postage.

Sept. 1. W. T. & E. SMITH.

FRUIT TREES.

WE offer this fall a fine lot of well grown Trees, embracing all the kinds of acknowledged merit. Our stock consists in part of Apples, Cherries, Peaches, Pears, Plums, &c., together with a very fine lot of Mazzard Cherry Stocks, one year old, and we propose to sell at a great bargain. The attention of Western Nurserymen, and those who deal in Trees elsewhere, is invited to our stock of Trees. Mazzard Cherry Pitts by the quart or bushel.

Catalogue No. 1—Wholesale Circular for the trade. Catalogue No. 2—Descriptive of kinds. J. D. CONKLIN,
Sept. 1.—1t* Locke, Cayuga Co., N. Y.

TO ALL AGUE SUFFERERS.

NEW PRINCIPLE! NO POISON!!

RHODES' FEVER AND AGUE CURE; OR, ANTIDOTE TO MALARIA.

FOR the prevention and cure of Intermittent and Remittent Fevers, Fever and Ague, Chills and Fever, Dumb Ague, General Debility, Night Sweats and all other forms of disease which have a common origin in *malaria* or *miasma*.

This is a NATURAL ANTIDOTE which will entirely protect any resident or traveler even in the most sickly or swampy localities, from any Ague or Billious disease whatever, or any injury from constantly inhaling Malaria or Miasma.

It will instantly check the Ague in persons who have suffered for any length of time, from one day to twenty years, so that they need never have another chill by continuing its use according to directions. The patient at once begins to recover appetite and strength, and continues until a permanent and radical cure is effected.

One or two bottles will answer for ordinary cases; some may require more. Directions printed in German, French, and Spanish, accompany each bottle. Price One Dollar. Liberal discounts to the trade.

JAS. A. RHODES, Proprietor, Providence, R. I.

PROOF OF SAFETY.

NEW YORK, June 11, 1855.

I have made a chemical examination of "Rhodes' Fever and Ague Cure," or "Antidote to Malaria," and have tested it for Arsenic, Mercury, Quinine, and Strychnine, but have not found a particle of either in it, nor have I found any substance in its composition that would prove injurious to the constitution.

JAMES R. CHILTON, M. D., Chemist.

EVIDENCE OF MERIT.

Extract of a letter from Prof. Fletcher, who was cured while engaged at Brown University, Providence, R. I.

INDIANAPOLIS, Ind., March 1, 1855.

JAMES A. RHODES, ESQ.—*Dear Sir:* Yours of the 15th ult. has been received, and I am glad to hear that a medicine so efficacious is to be introduced into this aguish country. I have the greatest confidence in its success, and can re-assure you of its happy effect upon me in entirely breaking up the chills and leaving me strong and healthy.

I like the statement on your wrappers that you will let the medicine stand on its own merits; and standing thus, I am most sanguine of its success.

I expect to travel over a large portion of our State this Spring, and I shall have abundant opportunity to recommend it verbally. Wherever I go I shall take great pleasure in thus testifying to its merits, and if you will instruct your Agent to let me have a few bottles, I will carry them with me to distribute for your benefit.

In haste, I remain, truly yours, MILES J. FLETCHER.

LEWISBURG, Union Co., Pa., May 2, 1855.

Mr. J. A. RHODES—*Dear Sir:* The box of medicine you sent me was duly received on the 11th of April. I have sold about one-half of it, and so far the people who have used it, are satisfied that it has cured them. It has certainly stopped the Ague in every one who has used it, and six of the cases were of long standing. My sister, who has had it for five or six years back, and could never get it stopped, except by Quinine, and that only as long as she could take it, is now, I think, entirely cured by your remedy.

LEWISBURG, Union Co., Pa., July 27, 1855.

Mr. J. A. RHODES—*Dear Sir:* I have but three bottles of your medicine left, as I have been selling it very fast during this month. I am now perfectly satisfied that it will cure the Ague. I have lived here four years, and had the the Ague all the time until I took your remedy; I have not had the least symptom of it since. All that use it praise it, as the only thing that will cure it.

I shall want some more as soon as you can send it, as I shall be out of it in a day or two.

Let me know whether I shall remit the money due you by mail, or whether an agent will call for it; and hoping to receive another lot soon, I remain, Yours respectfully,

C. McGRINLEY.

Had the Ague for Twelve Years!!

PROVIDENCE, June 20, 1855.

Having been informed of the illness of a poor but worthy woman, who has not been free from Fever and Ague a month at a time for the last twelve years, I supplied her gratuitously with Rhodes' Fever and Ague Cure. She took in all four bottles, which completely restored her to health and strength, and as four months has now elapsed, there is no reason to doubt the permanency of the cure.

I am also aware of many other cases in which it has been used, and have never known it to fail.

C. A. P. MASON, Apothecary.

Messrs. Barr & Goulden, Aurora, Ill., July 3, 1855, advise that "The Cure is selling very well. *We have not lost a case*, and consider it a sure thing: also recommend it in preference to any thing else." When Mr. Barr was requested to take the agency, he said he "should *have nothing to do with it*, unless he found it better than the other Ague remedies already in the market."

Messrs. Craighead & Browning, Indianapolis, Ind., July 9, 1855 say that "all we have sold has given full satisfaction, and we have no doubt of selling a large quantity as soon as the Ague season sets in."

MOUNT CLEMENS, Michigan, July 21, 1855.

Mr. J. A. RHODES—*Dear Sir:* Send me half gross of your Fever and Ague Cure as soon as possible. I have neglected to order until I sold the last bottle. Yours, H. R. BABCOCK.

PINE RUN, Michigan, July 31, 1855.

DR. J. A. RHODES—*Dear Sir:* Your Cure for the Fever and Ague has thus far performed wonders. It has not failed in one instance to perform a quick and permanent cure. Some that have been troubled with the distressing disease have been *entirely cured* by using *only one* bottle of CURE. Please send us four dozen, as we have but three bottles remaining. Truly yours,

LATHROP & McLEAN.

CAUTION TO AGUE SUFFERERS.

Take no more Asenic, Mercury, Quinine, Strychnine, or Anti-Periodics, or medicines of any kind, the virtue of which is owing to such poisonous drugs. The most they can do is to "break the chills" for a short time, while they are sure to cause constitutional maladies that cease only with life. Remember that the only Fever and Ague remedy that is HARMLESS as well as SURE, is

RHODES' FEVER AND AGUE CURE.

For sale by ISAAC POST, Rochester, and Druggists generally throughout the United States and Canadas.

Sept. 1.

C. M. SAXTON & CO., 152 FULTON STREET NEW YORK,

publish the following

BOOKS FOR THE COUNTRY,

SENT FREE OF POSTAGE TO ANY PART OF THE UNITED STATES.

1. Browne's American Field-Book of Manures, $1,25.
2. Browne's American Poultry Yard, twenty-sixth thousand, $1.
3. Browne's American Bird Fancier, cloth, 25cts.
4. Dadd's American Cattle-doctor, cloth, $1.
5. Dana's Muck Manual, cloth, $1.
6. Dana's Prize Essay on Manures, 25cts.
7. Stockhardt's Chemical Field Lectures, $1.
8. Blake's Farmer at Home, $1,25.
9. Buist's American Flower Garden Directory, $1,25.
10. Buist's Family Kitchen Gardener, 75cts.
11. Norton's Elements of Scientific and Practical Agriculture, 60cts.
12. Johnston's Catechism of Agricultural Chemistry, for schools, 25 cents.
13. Johnston's Elements of Agricultu'l Chemistry and Geology, $1.
14. Johnston's Lectures on Agricu'l Chemistry and Geology, $1,25.
15. Downing's Landscape Gardening, $3,50.
16. Fessenden's Complete Farmer and Gardener, $1,25.
17. Fessenden's American Kitchen Gardener, 25cts, cloth, 50cts.
18. Nash's Progressive Farmer, 60cts.
19. Richardson's Domestic Fowls, 25cts.
20. Richardson on the Horse; Varieties, Breeding, &c., 25cts.
21. Richardson on the Diseases and Management of the Hog, 25cts.
22. Richardson on the Destruction of the Pests of the Farm, 25cts.
23. Richardson on the Hive and Honey-bee, 25cts.
24. Milburn and Stevens on the Cow and Dairy Husbandry, 25cts.
25. Skinner's Elements of Agriculture, 25cts.
26. Topham's Chemistry made easy for the Use of Farmers, 25cts.
27. Allen's Treatise on the Culture of the Grape, $1.
28. Allen on the Diseases of Domestic Animals, 75cts.
29. Allen's American Farm Book, $1.
30. Allen's Rural Architecture, $1,25.
31. Pardee on the Cultivation of the Strawberry, &c., 50cts.
32. Pedder's Farmer's Land Measurer, 50cts.
33. Phelps' Bee-keeper's Chart, 25cts.
34. Guenon's Treatise on Milch Cows, illustrated, 38cts.
35. Gunn's Domestic Medicine, a book for every married man and woman, $3.
36. Randall's Sheep Husbandry, $1,25.
37. Youtt, Randall, and Skinner's Shepherd's own Book, $2.
38. Youtt on the Breeds and Management of Sheep, 75cts.
39. Youatt on the Horse, $1,25.
40. Youatt, Martin, and Stevens on Cattle, $1,35.
41. Youatt and Martin on the Breeds and Management of the Hog, 75cts.
42. Munn's Practical Land Drainer, 50cts.
43. Stephen's Book of the Farm, complete, 450 illustrations, $4.
44. The Architect; or, Plans for Country Dwellings, $6.
45. Thaer, Shaw, and Johnson's Principles of Agriculture, $2.
46. Smith's Landscape Gardening, Parks, and Pleasure Grounds, $1,25.
47. Weeks on the Honey Bee, 50cts.
48. Wilson on the Cultivation of Flax, 25 cts.
49. Miner's American Bee-keeper's Manual, $1.
50. Quinby's Mysteries of Bee-keeping, $1.
51. Cottage and Farm Bee-keeper, 50cts.
52. Elliott's American Fruit-grower's Guide, $1,25.
53. The American Florist's Guide, 75cts.
54. Every Lady her own Flower Gardener, 25cts., cloth, 50cts.
55. The American Rose Culturist, paper, 25cts., cloth, 50cts.
56. Hoare on the Cultivation of the Vine, 50cts.
57. Chorlton Cold Grapery, from direct American Practice, 50cts.
58. Saxton's Rural Hand Books, 2 vols., $2,50.
59. Rement's Rabbit Fancier, 50cts.
60. Roemelin's Vine-dresser's Manual, 60cts.
61. Neill's Fruit, Flower and Vegetable Gardener's Companion, $1.

Sept. 2t.

VIENNA PLASTER THE BEST FOR LAND.

I HAVE analyzed a specimen of "VIENNA PLASTER, OR GYPSUM," and also specimens of "CAYUGA" and "ONONDAGA PLASTER," and find them to yield respectively as follows:

VIENNA PLASTER.

SULPHATE OF LIME,	70 92
Carbonate of Lime,	4.45
Carbonate of Magnesia,	1.50
Alumina,	2.46
Silica,	1.84
Protoxide of Iron,	21
Water,	18.33
Loss,	29
	100.00

New York, March 19, 1854.
JAMES R. CHILTON, M. D., Chemist.

ONONDAGA PLASTER.

SULPHATE OF LIME,	63 20
Sulphuric of Lime,	1.01
Carbonate of Lime,	6.30
Carbonate of Magnesia,	1.60
Alumina,	2.80
Silica,	2.46
Water,	22.10
Loss,	24
	100.00

CAYUGA PLASTER.

SULPHATE OF LIME,	50.40
Sulphuret of Lime,	2.00
Carbonate of Lime,	18.00
Carbonate of Magnesia,	3.80
Alumina,	4.00
Silica,	4.40
Protoxide of Iron,	32
Water,	16.50
Loss,	48
	100.00

New York, April 2, 1852.
JAMES R. CHILTON, M. D., Chemist,

It appears from the above analysis that the "VIENNA PLASTER" is superior for land to that of the Cayuga or Onondaga, inasmuch as it contains the largest per centage of the "SULPHATE OF LIME," which is the most beneficial property in land Plaster.

This Plaster can be found only at VIENNA, GENEVA, CANANDAIGUA, VICTOR, FISHER'S, and PITTSFORD. Farmers should not fail to get the VIENNA PLASTER.

July 1—tf.

FRUIT AND ORNAMENTAL TREES, SHRUBS, ROSES, VINES, &c., &c.

THE subscribers would respectfully call the attention of persons commencing the Nursery business, dealers in Trees and Orchardists, to their thrifty stock of Nursery stuff, which comprises almost every desirable tested variety of Fruit and Ornamental tree, &c., &c.

☞ Their Depot and Green Houses are on State street, within a short distance of the Railroad station. Persons visiting Rochester to purchase Nursery stock would do well to give them a call, as purchases can be made on very advantageous terms.

The Nurseries are located very conveniently for shipping to all parts of the States and Canadas.

Orders by mail punctually attended to if addressed to the subscribers.

Rochester and Charlotte Plank Road Nurseries, Rochester, N.Y.
Sept., 1855-2t. C. J. RYAN & CO.

OLD ROCHESTER NURSERIES.

THE proprietor of these extensive Nurseries offers for sale for the coming autumn, a choice collection of Fruit and Ornamental Trees and Shrubs, consisting in part of

50,000 Dwarf and Standard Apple Trees.
Also, 10,000 very fine Northern Spy do., from 7 to 9 feet high.
150,000 Dwarf and Standard Pears.
20,000 Cherries.
10,000 Plums.
10,000 Peach.
Also, Apricots, Nectarines, Quinces, Currants, Gooseberries, Grapes, Raspberries, &c., &c.

The ornamental department is very varied and extensive. He would particularly call attention to his stock of Norway Spruce, Scotch and Austrian Pine, and other evergreens. Dealers or planters will do well to see my inventory before purchasing elsewhere, which will be mailed free on pre-paid application enclosing a one cent stamp. Packing done in the most approved manner.

SAMUEL MOULSON, Office 36 Front Street,
Sept. 1-1t. Rochester, N. Y.

'GENESEE VALLEY NURSERIES.'

A. FROST & CO., ROCHESTER, N. Y.

SOLICIT the attention of amateurs, orchardists, nurserymen, and others about to plant, to their extensive stock of well-grown Fruit and Ornamental Trees, Shrubs, Roses, &c. &c.

The Nurseries are now very extensive, and embrace one of the largest and finest collections in the country, and their stock is far superior to any that they have before offered. It is partly comprised in the following:

Standard Fruit Trees.—Apple trees, eighty varieties; Pear trees, one hundred varieties; Cherry trees, sixty varieties; Plum trees, forty varieties; Peach trees, thirty varieties; Nectarine, six varieties; Apricot, six varieties; and other kinds, comprising every sort of merit.

Dwarf and Pyramid Fruit Trees, of every description, for cultivation in orchards and gardens, have received particular attention. They embrace the following kinds, and comprise nearly the same number of sorts as are grown for standards:

Pears upon the best European Quince stocks.
Apples upon Paradise and Doucain stocks.
Cherries upon Cerasus Mahaleb stocks.

Small Fruits, as Currants, eighteen varieties; Gooseberries, sixty varieties; Grapes, Native and Foreign, twenty-five varieties; Raspberries, six varieties; Strawberries, twenty varieties; and other miscellaneous fruits, as well as esculent roots, in variety.

Deciduous and Evergreen Trees, for lawns, parks, streets, &c.

Evergreen and Deciduous Shrubs, in great variety, including four hundred sorts of Roses.

Hedge Plants—Buckthorn, Osage Orange and Privet; and for screens and avenues, American Arbor Vitæ (White Cedar), Norway Spruce, &c.

Herbaceous Plants.—A very select and extensive assortment.

Green-house and Bedding Plants, of every description.

All articles are put up in the most superior manner, so that plants, &c., may be sent thousands of miles and reach their destination in perfect safety.

Parties giving their orders may rely on receiving the best and most prompt attention, so that perfect satisfaction may be given the purchaser.

The following descriptive Catalogues, containing *prices*, are published for *gratuitous* distribution, and will be mailed upon every application; but correspondents are expected to enclose a one cent postage stamp for each Catalogue wanted, as it is necessary that the postage should be prepaid:

No. 1. Descriptive Catalogue of Fruits for 1854-5.
No. 2. Descriptive Catalogue of Ornamental Trees, Shrubs, Roses, &c. &c., for 1854-5.
No. 3. Wholesale Catalogue or Trade List, just published for the fall of 1854 and spring of 1855, comprising Fruits, Evergreens, Deciduous Trees, &c. &c., which are offered in large quantities.

October 1, 1854.—tf

A. FROST & CO.

GENESEE VALLEY NURSERIES, ROCHESTER, N. Y.

THE stock of Fruit, Ornamental Trees, &c., offered by us this season is very large, and much the finest that we have ever had for sale.

Our Nursery grounds at the present moment occupy one hundred and fifty acres of fine land, completely covered with very thrifty and well grown plants, which enables us to furnish the entire orders from customers, and give the most perfect satisfaction. Packing of trees and plants is done in the most superior manner, by men of long experience in the business, so that plants may go thousands of miles in perfect safety.

Our wholesale catalogue (No. 4) for the Autumn of 1855 and Spring of 1856, has just been published for gratuitous distribution, containing the prices of Trees, &c., in large quantities.

Nurserymen are particularly directed to notice our choice young Nursery stock, described in above catalogue, such as fruit trees 1 year old, from bud or graft; fruit tree stocks of every description, evergreens of small size, &c.

The following catalogues, containing prices, will be sent *gratis* by mail to those who enclose a one cent postage stamp for each:

No. 1 Descriptive Catalogue of Fruits.
No. 2 " " " Ornamental Trees, Shrubs, Roses, &c.
No. 3 Descriptive Catalogue of Dahlias, Verbenas, Green House plants, &c.
No. 4. Wholesale Catalogue or Trade List, (just published.)

Sept. 1-1t.

WM. H. LOOMIS,

WHOLESALE and Retail dealer in Fruit and Ornamental Trees, Plants and Shrubs, of all the leading and most popular varieties. Standard and dwarf trees of Apples, Pears, Plums, Peaches, Cherries, &c., all vigorous, stockey and well formed.

Also, a general assortment of Gooseberries, Currants, Raspberries, &c. &c. Ornamental trees and shrubs of every variety; Roses a large collection; Green House plants can be furnished on the shortest notice. Also a large quantity of Field and Garden Seeds on hand, and for sale at the lowest cash prices. Address (post-paid) Agricultural Rooms, South Bend, Ind.

March, 1855.—tf. WM. H. LOOMIS.

UNITED STATES

TENT AND FLAG MANUFACTORY,

ROCHESTER, N. Y.

FOR SALE OR RENT.

THE subscriber having been honored with orders for Tents and Flags from most of the States of the Union, and also from several points in Canada West, would remind his old friends and patrons that he has materially extended his operations, and that he now keeps constantly on hand a large assortment of Tents and Flags of every description, adapted for

AGRICULTURAL FAIRS, MILITARY ENCAMPMENTS,

Camp Meetings, Conferences, Excursions, Public or Private Picnic and Fishing Parties, Political Gatherings, Exhibitions, Parties on Tours of Survey or Engineering, &c., &c., which he will rent on liberal terms.

He has a large number of Tents suitable for

CONFERENCES, AGRICULTURAL SOCIETIES, &c. &c.,

Of each the following sizes:—100 feet diameter; 80 feet do.; 70 feet do.; 60 feet do.; 50 feet do.; and 80 feet by 110; 60 by 90; 50 by 80. Also for

CAMP MEETING AND MILITARY TENTS—24 feet by 30; 16 by 24; 12 by 17; 9 by 12.

These tents are of his own manufacture, of the very best material, and are every way desirable. When parties renting tents desire it, a competent person will be sent to erect and take charge of them.

The light and portable, yet durable character of the Tents manufactured at this establishment, render them an article of unusual economy and comfort in all cases where shelter or protection from the elements may be desirable while temporarily sojourning for business or pleasure.

He has furnished Tents to the Agricultural Societies of New York, Connecticut, Pennsylvania, Wisconsin, Michigan, Illinois, Canada, and to many other Agricultural and other Associations, and can therefore with confidence refer those who are about purchasing or renting Tents, to any of the officers of these Associations as to the character of his work and fairness of his dealings.

TENTS AND FLAGS OF EVERY DESCRIPTION MADE TO ORDER.

Having on hand the largest assortment of Tents on the Continent, he can fill orders for any number on short notice.

☞ All orders by Mail will meet with prompt attention.

E. C. WILLIAMS, Rochester, N. Y.

N. B.—A large assortment of Tent and Sail Duck constantly on hand and for sale. Aug. 1.

FAIRBANKS' SCALES.

WAREHOUSE No. 189 BROADWAY, NEW YORK.

THESE celebrated Scales are still manufactured by the original inventors. By the enlargement of their work, and the introduction of improved machinery, these Scales are now furnished at greatly reduced prices. We have recently added to our stock a full assortment of *fine Gold and Druggist's Scales, Spring Balances, Patent Beams, Weights, &c.*, and now offer at wholesale and retail the most complete assortment of weighing apparatus to be found in the United States.

We have a new and convenient article which we denominate the *Family Scale*, it being particularly adapted to the wants of farmers and all housekeepers.

Hay and Coal Scales set in any part of the country by experienced workmen.

Orders and letters of inquiry by mail, will receive prompt attention. FAIRBANKS & CO.,

August 1, 1855—3t. 189 Broadway, New York.

FRUIT AND ORNAMENTAL TREES.

(AUTUMN OF 1855.)

OUR new wholesale Catalogue or Trade List for the Autumn of 1855, is ready, and will be sent *gratis* to all who enclose a stamp.

The stock now on the ground is of the finest description, and by far the largest that has ever been offered in this country.

Nurserymen, Dealers, and Planters can be supplied on very advantageous terms, and they will find it to their interest to consult our list and examine stock before purchasing.

Our arrangements for packing and shipping are so complete that we can forward packages to the most remote parts of the United States and Canada with safety.

Any of the following Catalogues will be sent to all who apply, and enclose a stamp for each:

No. 1. A Descriptive Catalogue of Fruits.

No. 2. A Descriptive Catalogue of Ornamental Trees, Shrubs, Roses, &c., &c.

No. 3. A Catalogue of Dahlias, Verbenas, Petunias, and select new Green House and Bedding Plants, published every spring.

No. 4. A Wholesale Priced Catalogue for Nurserymen and Dealers.

No. 5. A Supplemental Catalogue of Fruits—containing prices of Fruit Trees for 1854 and 1855, and lists of New Varieties.

ELLWANGER & BARRY,

August 1—2t. Mount Hope Nurseries, Rochester, N. Y.

MANSFIELD'S IMPROVED PATENT

CLOVER HULLING AND CLEANING MACHINES.

THESE Machines obtained the first Premiums at three successive Ohio State Fairs; also at the World's Fair, New York, and never failed to take the first premium wherever exhibited.

It hulls and cleans from 25 to 50 bushels per day.

Manufactured and for sale by

Price $100. M. H. MANSFIELD.

Ashland, Ohio, August 1, 1855—3t.

PEACH TREES.

I HAVE on hand, ready for delivery the coming fall, 6,000 Peach Trees, extra sizes, of the principal best varieties. For sale by the hundred, or in smaller quantities. Address the subscriber.

CHARLES W. SEELYE,

Aug. 1—3t. Box 455, Rochester, N. Y.

PERUVIAN GUANO.

PERUVIAM GUANO No. 1, with Government weight and brand upon each bag. Price $53 per ton of 2,000 lbs.

PERUVIAN GUANO No. 1, taken from the lower part of the cargo, a little damp, with above brand upon each bag. Price $43 per ton of 2,000 lbs.

As the latter article is sold by some retail dealers for the best quality, be particular to observe that the *damp* Guano has the figure 2 under the weight mark. For sale by

ANTOINE LONGETT,

August 1—3t. 34 Cliff St., corner of Fulton, New York.

CUTTER RIGHTS FOR SALE

WE will test our Hay, Stalk and Straw Cutter, patented November 8th, 1853, for speed, ease and durability, against any other in the United States. J. JONES & A. LYLE.

☞ For further information, address JONES & LYLE, Rochester, N. Y. February 1, 1854.—tf

RARE AND VALUABLE SEEDS,

BY MAIL, FREE OF POSTAGE.

Orange Watermelon, 16 seeds	25 cents
Ice Cream or White Sugar Melon, 16 seeds	25
The genuine Chinese Hoo-sung, 100 seeds	25
Negley's Seedling Cucumber, 12 seeds	25
Five-foot Cucumber, 6 seeds	25
Cherry Pea—new and curious—warranted bug proof, 12 seeds	25
Citron Nutmeg Muskmelon, 20 seeds	12½
The celebrated Japan Pea, 20 seeds	12½
California Muskmelon, 12 seeds	12½
The Floral King, 12 seeds	12½

Mexican wild Potatoes at $1 per bushel, and Sweet Potato plants at $1 per hundred, or $4 for five hundred, or $7.50 per thousand, delivered to American Express Company at Macedon depot, New York Central Railroad.

Please send current funds or gold; if not convenient to make change, I will return the change in Postage Stamps.

I. W. BRIGGS,

May—tf West Macedon, Wayne Co., N. Y.

MERINO SHEEP.

THE subscriber will sell a few Spanish Merino Sheep—bucks and ewes—of undoubted purity of blood. He will also dispose of a part of his stock of imported FRENCH Merinos.

Gentlemen purchasing from this flock can have the sheep forwarded to the principal Western towns at my risk.

Sept. 1, 1854—tf R. J. JONES, Cornwall Vt.

BOOKS FOR THE FARMERS!

FURNISHED BY THE PROPRIETOR OF GENESEE FARMER.

I The Cow, Dairy Husbandry, and Cattle Breeding. Price 25 cts.
II. Every Lady her own Flower Gardener. Price 25 cents.
III. The American Kitchen Gardener. Price 25 cents.
IV. The American Rose Culturer. Price 25 cents.
V. Prize Essay on Manures. By S. L. Dana. Price 25 cents.
VI. Skinner's Elements of Agriculture. Price 25 cents.
VII. The Pests of the Farm, with directions for extirpation. Price 25 cents.
VIII Horses—their Varieties, Breeding, Management, &c. Price 25 cents.
IX. The Hive and Honey Bee—their Diseases and Remedies. Price 25 cents.
X. The Hog—its Diseases and Management. Price 25 cents.
XI. The American Bird Fancier—Breeding, Raising, &c. 25 cts.
XII. Domestic Fowls and Ornamental Poultry. Price 25 cents.
XIII. Chemistry made Easy for the Use of Farmers. Price 25 cents.
XIV. The American Poultry Yard. The cheapest and best book published. Price $1.
XV. The American Field Book of Manures. Embracing all the Fertilizers known, with directions for use. By Browne. $1.25.
XVI. Buist's Kitchen Gardener. Price 75 cents.
XVII. Stockhart's Chemical Field Lectures. Price $1.
XVIII. Wilson on the Cultivation of Flax. Price 25 cents.
XIX. The Farmer's Cyclopedia. By Blake. Price $1.25.
XX. Allen's Rural Architecture. Price $1.25.
XXI. Phelps's Bee Keeper's Chart. Illustrated. Price 25 cents.
XXII. Johnston's Lectures on Practical Agriculture. Paper, price 25 cents.
XXIII. Johnston's Agricultural Chemistry. Price $1.25.
XXIV. Johnston's Elements of Agricultural Chemistry and Geology. Price $1.
XXV. Randall's Sheep Husbandry. Price $1.25.
XXVI. Miner's American Bee-Keeper's Manual. Price $1.
XXVII. Dadd's American Cattle Doctor. Complete. Price $1.
XXVIII. Fessenden's Complete Farmer and Gardener. 1 vol. Price $1.25.
XXIX. Allen's Treatise on the Culture of the Grape. Price $1.
XXX. Youatt on the Breeds and Management of Sheep. Price 75 cents.
XXXI. Youatt on the Hog. Complete. Price 60 cents.
XXXII. Youatt and Martin on Cattle. By Stevens. Price $1.25.
XXXIII. The Shepherd's own Book. Edited by Youatt, Skinner and Randall. Price $2.
XXXIV. Stephens's Book of the Farm; or Farmer's Guide. Edited by Skinner. Price $4.
XXXV. Allen's American Farm Book. Price $1.
XXXVI. The American Florist's Guide. Price 75 cents.
XXXVII. The Cottage and Farm Bee-Keeper. Price 50 cents.
XXXVIII. Hoare on the Culture of the Grape. Price 50 cents.
XXXIX. Country Dwellings; or the American Architect. Price $6
XL. Lindley's Guide to the Orchard. Price $1.25.
XLI. Gunn's Domestic Medicine. A book for every married man and woman. Price $3.
XLII. Nash's Progressive Farmer. A book for every boy in the country. Price 50 cents.
XLIII. Allen's Diseases of Domestic Animals. Price 75 cents.
XLIV. Saxton's Rural Hand-books. 2 vols. Price $2.50.
XLV. Beattie's Southern Agriculture. Price $1.
XLVI. Smith's Landscape Gardening. Containing hints on arranging Parks, Pleasure Grounds, &c. Edited by Lewis F. Allen Price $1.25.

RECENTLY PUBLISHED.

XLVII. The Farmer's Land Measurer; or Pocket Companion Price 50 cents.
XLVIII. Buist's American Flower Garden Directory. Price $1.25.
XLIX. The American Fruit Grower's Guide in Orchard and Garden. Being the most complete book on the subject ever published.
L. Quipby's Mysteries of Bee-Keeping explained. Price $1.

The above will be sent free upon receipt of price annexed.

ROCHESTER COMMERCIAL NURSERIES.

WE take pleasure in informing the public that we are still raising FRUIT and ORNAMENTAL TREES, GRAPE VINES, CURRANTS, STRAWBERRIES, &c. &c., in great quantities.

We call especial attention to our

CHERRY STOCKS, for Nurserymen.
APPLE " " "
PLUM " which won't have the knots.
ANGERS QUINCE, &c. &c., and to the

NEW SEEDLING STRAWBERRY HOOKER.

This splendid fruit combines all the requisites of a first class Strawberry in one variety, a thing not heretofore accomplished.

Very large size;
Beautiful shining dark color;
Unequaled excellence of flavor;
Great productiveness and vigor;
A perfect flower, requiring no fertilizing.

Price $1 50 per dozen; $5 per 100.

BISSELL & HOOKER.
August 1, 1855. East Avenue, corner Goodman St.

DRAINAGE AND SEWERAGE PIPE MACHINE.

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Bricks, Flooring Tiles &c., are molded with the greatest facility and precision.

A man and three boys can turn out from 5,000 to 10,000 feet of pipes per day, according to sizes; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of some of the first Machinists of the day, the following Prizes have been awarded to it:

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, ... £5 0 0
By the same Society, the following year, as the best Machine of the day, ... 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, ... Silver Medal.
By the Highland Agricultural Society, at its annual meeting in 1846, as the best Machine, ... 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a Working Model of this Machine was awarded the SILVER MEDAL AND DIPLOMA; and at the Fall Exhibitions the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a DIPLOMA FROM EACH SOCIETY. It was awarded the FIRST PRIZE AND DIPLOMA at the recent Exhibition in London, C. W.

The price of the Machine is £50 (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ THE PATENTEE GUARANTEES THE EFFECTIVE WORKING OF THE MACHINE. ☜

☞ All orders to be addressed to

JOHN H. CHARNOCK,
Drainage Engineer, Hamilton, C. W., the Patentee.
January 1, 1855.—tf

THE GENESEE FARMER,

A MONTHLY JOURNAL OF

AGRICULTURE & HORTICULTURE.

Volume XVI., Second Series, 1855

DANIEL LEE AND JAMES VICK, EDITORS.
JOSEPH FROST, HORTICULTURAL EDITOR.

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